



REVISION HISTORY

| DATE | VERSION | AUTHOR |
|--------------|---------|---------------------------------|
| October 2013 | 1.0 | Bijwoordbeeld tekst en techniek |
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| | | |
|-------|---|----|
| 1 | WORKING WITH THE HORUS MOVIE PLAYER | 7 |
| 1.1 | Introduction Horus Movie Player | 7 |
| 1.2 | System requirements | 7 |
| 2 | INSTALLING THE SOFTWARE | 8 |
| 3 | WORKING WITH THE MOVIE PLAYER | 9 |
| 3.1 | Open a movie file | 9 |
| 3.2 | Description of the screen elements | 10 |
| 3.2.1 | <i>Map screen</i> | 10 |
| 3.2.2 | <i>Selecting a map background</i> | 11 |
| 3.2.3 | <i>Zoom and move the map background</i> | 11 |
| 3.2.1 | <i>Selecting a position on the travelpath</i> | 11 |
| 3.2.2 | <i>Download a map for offline use</i> | 12 |
| 3.3 | Player controls - buttons | 14 |
| 3.3.1 | <i>Timeline</i> | 14 |
| 3.4 | Main screen cursor | 14 |
| 3.4.1 | <i>Zooming in and out</i> | 15 |
| 3.4.2 | <i>Go to a specific frame number</i> | 15 |
| 3.4.3 | <i>Taking a snapshot</i> | 16 |
| 3.4.4 | <i>Snapshot properties</i> | 16 |
| 3.4.5 | <i>Taking a panorama</i> | 16 |
| 3.4.6 | <i>Muting the audio</i> | 17 |
| 3.5 | Player preferences | 17 |
| 3.5.1 | <i>Image rendering mode</i> | 17 |
| 3.5.2 | <i>Spherical view</i> | 17 |
| 3.5.3 | <i>Flat view</i> | 18 |
| 3.5.4 | <i>Panoramic view</i> | 18 |
| 3.5.5 | <i>Multiview</i> | 18 |
| 3.6 | Rendering an external camera | 19 |
| 3.6.1 | <i>Disable thumbnail viewer update</i> | 20 |
| 3.6.2 | <i>Playback speed</i> | 20 |
| 3.6.3 | <i>Adjust the brightness</i> | 20 |

| | | |
|--------|---|----|
| 3.7 | Camera settings | 21 |
| 3.7.1 | <i>Adjusting the camera angles</i> | 21 |
| 3.7.2 | <i>Adjusting the camera height</i> | 21 |
| 3.7.3 | <i>Adjusting the time shift</i> | 21 |
| 3.7.4 | <i>Adjusting the camera position in relation to the GPS</i> | 21 |
| 3.7.5 | <i>Main screen cursor</i> | 21 |
| 3.8 | Compass and alignment axis | 22 |
| 3.9 | Exporting images and videos | 23 |
| 3.9.1 | <i>Export as .AVI</i> | 23 |
| 3.10 | Saving a session | 24 |
| 3.10.1 | <i>Opening a saved work session</i> | 24 |
| 4 | HORUS PROJECT BUILDER | 25 |
| 4.1 | Creating a new Horus Project | 25 |
| 5 | LAYER MANAGER MODULE | 27 |
| 5.1 | Starting the Layer manager module | 27 |
| 5.1.1 | <i>Opening a layer (GIS/CAD)</i> | 28 |
| 5.1.2 | <i>Editing of layers – activation and deactivation</i> | 29 |
| 5.1.3 | <i>Visibility of layers</i> | 29 |
| 5.1.4 | <i>Troubleshooting – layer visibility</i> | 29 |
| 5.1.5 | <i>Setting the visible range</i> | 29 |
| 5.1.6 | <i>Adjusting the layer object colors</i> | 30 |
| 5.1.7 | <i>Making objects in a layer selectable</i> | 30 |
| 5.1.8 | <i>Override height</i> | 30 |
| 5.1.9 | <i>Selecting an icon for points in a label</i> | 30 |
| 5.1.10 | <i>Select layer labeling</i> | 31 |
| 5.2 | Creating a new layer | 32 |
| 5.2.1 | <i>Creating a new form</i> | 32 |
| 5.2.2 | <i>Creating an annotations form</i> | 32 |
| 5.2.3 | <i>XML Commands</i> | 33 |
| 5.2.4 | <i>Adding a hyperlink field to a form</i> | 34 |

| | | |
|--------|---|----|
| 5.3 | Creating a new layer | 35 |
| 5.3.1 | <i>Annotation form functions</i> | 36 |
| 5.3.2 | <i>Adding a hyperlink to an annotation</i> | 37 |
| 5.3.3 | <i>Select the import action</i> | 37 |
| 5.3.4 | <i>Import as spatialite layer</i> | 37 |
| 5.3.5 | <i>Merge with an existing layer</i> | 37 |
| 5.3.6 | <i>Import as a new layer</i> | 38 |
| 5.3.7 | <i>Show attribute data of geometries</i> | 38 |
| 5.3.8 | <i>Add a preset number to a data form</i> | 38 |
| 5.3.9 | <i>Show annotations form of a geometry</i> | 39 |
| 5.3.10 | <i>Deleting a layer</i> | 39 |
| 5.3.11 | <i>Exporting a layer</i> | 39 |
| 5.4 | Export to Excel | 40 |
| 5.4.1 | <i>Select the export source</i> | 40 |
| 6 | LAYER EDIT MODULE | 41 |
| 6.1 | Geometries | 42 |
| 6.1.1 | <i>Estimating measurements</i> | 42 |
| 6.1.2 | <i>Adding a point</i> | 43 |
| 6.1.3 | <i>Changing the icon for a point</i> | 43 |
| 6.1.4 | <i>Adding a line (length measurement)</i> | 44 |
| 6.1.5 | <i>Adding a multiline</i> | 44 |
| 6.1.6 | <i>Adding a polygon</i> | 45 |
| 6.1.7 | <i>Adding a height line</i> | 45 |
| 6.1.8 | <i>Deleting a geometry</i> | 46 |
| 6.1.9 | <i>Clone geometries</i> | 46 |
| 6.2 | Height Profiler | 47 |
| 6.3 | Multi click measurement | 47 |
| 7 | IR COLORING MODULE | 50 |
| 7.1 | Select an IR rendering method | 50 |
| 7.1.1 | <i>IR coloring: thermal rendering</i> | 50 |
| 7.1.2 | <i>IR coloring: rainbow rendering</i> | 51 |
| 7.1.3 | <i>IR coloring: blue –red-white rendering</i> | 51 |
| 7.1.4 | <i>Adjusting the IR coloring</i> | 51 |
| 7.2 | Deactivating the IR Coloring | 51 |

| | | |
|-------|---|----|
| 8 | IMMERSIVE VIEW BUILDER MODULE | 52 |
| 8.1 | Building an immersive view | 52 |
| 8.1.1 | <i>Select a camera</i> | 52 |
| 8.1.2 | <i>Determine the image position</i> | 53 |
| 8.1.3 | <i>Adjust the image size</i> | 53 |
| 8.1.4 | <i>Blend the overlap</i> | 54 |
| 8.1.5 | <i>Correct the camera distortion</i> | 55 |
| 8.1.6 | <i>Adjust the IMU settings</i> | 55 |
| 8.1.7 | <i>Saving the IMU settings</i> | 56 |
| 8.2 | Load a default camera setup | 56 |
| 9 | ANNOTATION MODULE | 57 |
| 9.1 | Browse annotations | 58 |
| 9.2 | Edit annotations | 58 |
| 9.2.1 | <i>Adding a attachment to an annotation</i> | 59 |
| 9.2.2 | <i>Cancel editing annotations</i> | 59 |
| 9.3 | Save annotations | 59 |
| 9.4 | Export annotations | 60 |
| 9.4.1 | <i>Export annotations by category</i> | 60 |
| 9.4.2 | <i>Export annotations in Excel</i> | 60 |
| 10 | INDEX | 61 |

1 Working with the Horus Movie Player

1.1 Introduction Horus Movie Player

The Horus Inventory Suite consists of three separate programs: the Movie Recorder, the Movie Maker and the Movie Player. This manual describes the Horus Movie Player software. The Movie Player can be supplied with optional inventory tools as the Layer Manager, Annotation Module, Immersive View Builder and IR Coloring. These are also described in this manual.

The Movie Recorder's main function is to record all the data from the camera's and additional sensors. The Movie Recorder has a simple playback function; it is merely used to check the images that have just been recorded. The Horus Movie Maker is used to edit the recordings, it is used to select the useful recordings and allows you to cut out sections that aren't needed.

The Horus Movie Player is used for the actual inspection and survey duties.

This manual is written in the assumption that the reader has basic knowledge of video inspections and basic computer knowledge.

1.2 System requirements

We recommend that you run the Horus Movie Player on a machine running on Windows 7 x86 / x64, Open GL 2.1 or higher and an Intel Core i3 processor or faster.

The Layer manager requires 64 bit, i7 processor, graphical card NVIDIA 600 series or higher and 8GB internal memory

2 Installing the software

You can start the installation of the Horus Movie Player by double-clicking on the installation package icon:

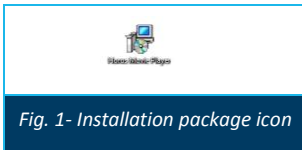


Fig. 1- Installation package icon

This will start the setup wizard, click *Next* to start the installation procedure:

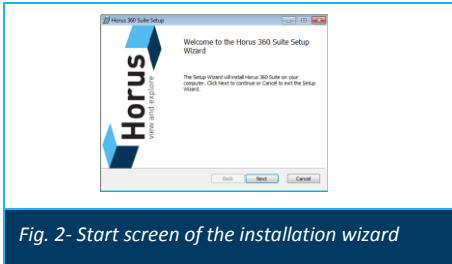


Fig. 2- Start screen of the installation wizard

Before installation just must have read the software license agreement, after accepting the terms in the agreement, check the box and press *Next* to proceed:

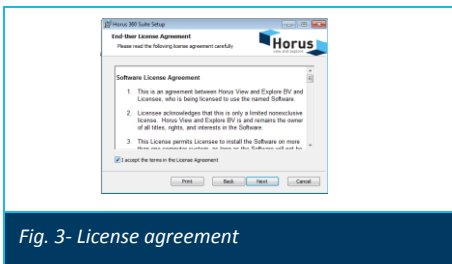


Fig. 3- License agreement

After that, you must select the location where the Horus Movie Player should be installed. Click *Next* after you have selected the desired installation location:

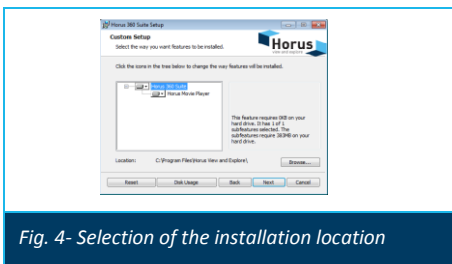


Fig. 4- Selection of the installation location

The installation wizard needs a final approval before it can install the Horus Movie Player. Click *Install* to start the installation:

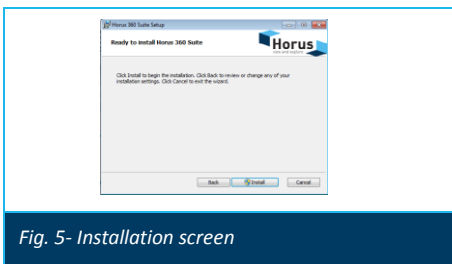


Fig. 5- Installation screen

The progress of the installation is shown by a progress bar. After the installation is finished, click *Finish*.

3 Working with the Movie Player

The Horus Movie Player is started by double-clicking the icon on the desktop:



Fig. 6- Desktop icon

The program will show a splash screen during the start sequence:

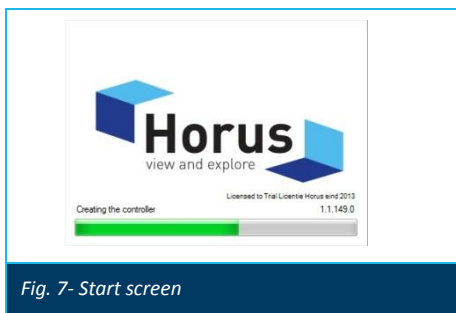


Fig. 7- Start screen

3.1 Open a movie file

After the program has started, you can open the movie file you want to review. To open a movie file, click *File* in the menu bar and select *Open file*:

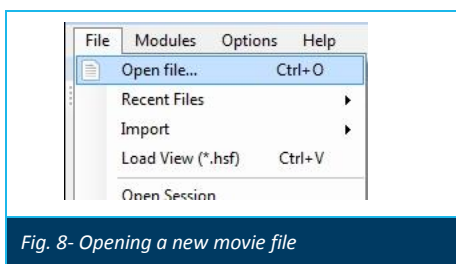


Fig. 8- Opening a new movie file

The program will open a window in which you can select the recording. The Movie Player will open the file after you click on *OK*.

3.2 Description of the screen elements

The user can control the Horus Movie Player by using a mouse and the toolbar buttons. The screen elements are explained in this section.

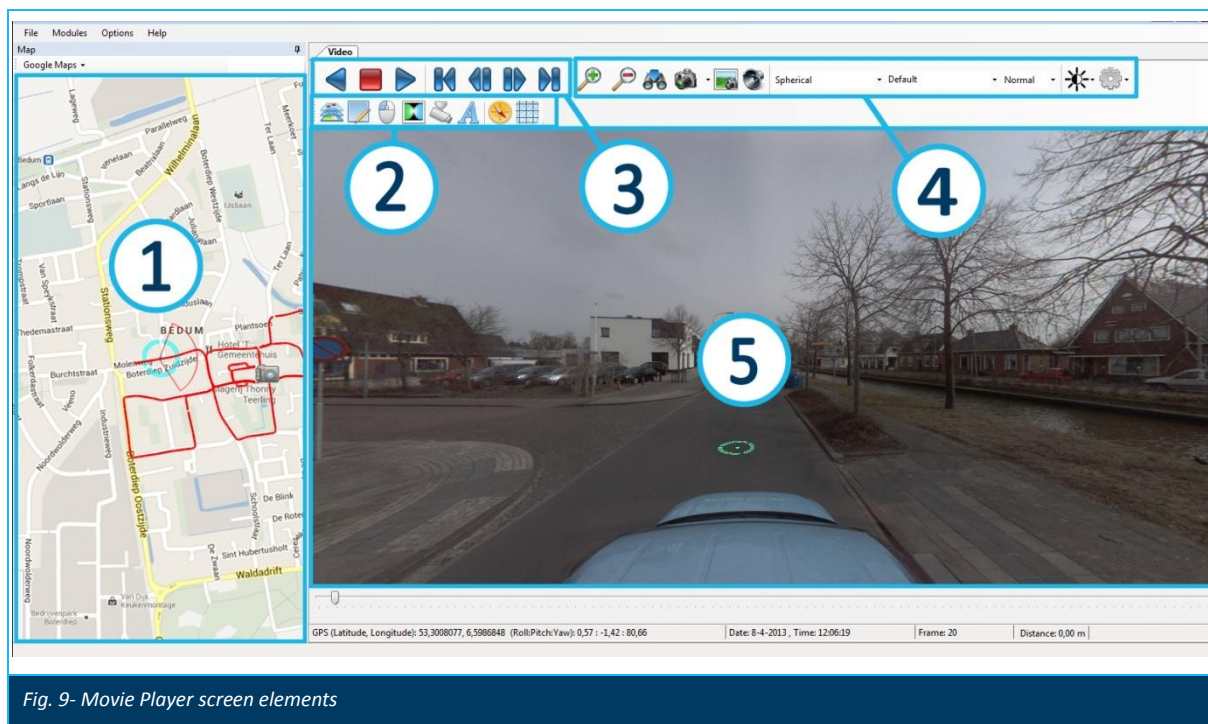


Fig. 9- Movie Player screen elements

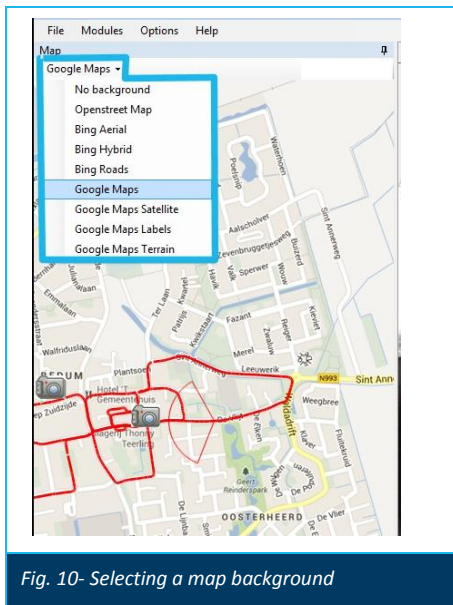
- 1 Map screen
- 2 Modules toolbar
- 3 Player control buttons
- 4 Preferences toolbar
- 5 Main screen

3.2.1 Map screen

The map screen shows the geographical location where the image in the main screen (5) was recorded. The camera position is shown in the center of the map screen together with the direction of the field of view and the travel path (in red). Annotations that are made with the Annotation Module are also shown in the map screen. The data loaded via the Layer manager will also be visible in the map.

3.2.2 Selecting a map background

You can select a map background, or turn off the map background by choosing one of the options in the pull down menu:



The cursor position in the map screen is also shown in the main screen.

3.2.3 Zoom and move the map background

You can zoom in and out on the map by using the scroll wheel on your mouse. Place the mouse pointer on the map screen and move the mouse wheel up or down to zoom in or out. By holding the left mouse button and moving the mouse, you can move the map.

3.2.1 Selecting a position on the travel path

It's possible to jump to a recording location on the travel path on the map by clicking on the location in the map screen. Place the mouse pointer on the location and left-click with the mouse. The Movie Player will show the images recorded on that location in the main screen.

3.2.2 Download a map for offline use

It is possible to download a map that covers the travel path of the entire recording session. The download function is intended for situations in which no internet connection is available, but a map background is necessary.

To start downloading a map it is necessary that a recording is opened. The travel path of the recording session determines the amount of map tiles that is needed. Select the type of map you want to download in the map screen:

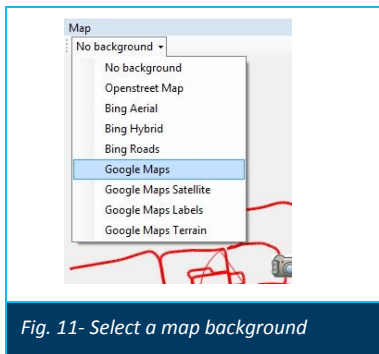


Fig. 11- Select a map background

Next, click *Download map tiles* from the *File* menu:

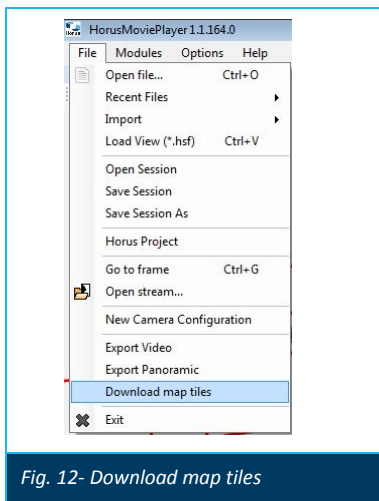


Fig. 12- Download map tiles

Movie Player will calculate the amount of tiles that has to be downloaded. Click *Start* to start the download:

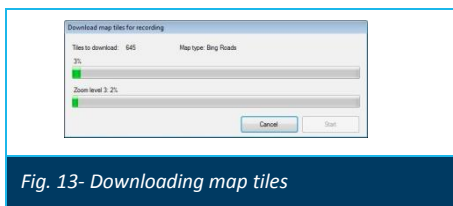


Fig. 13- Downloading map tiles

After the download is finished, a pop up screen will appear. Click **OK** to finish the download process. The map data is downloaded to the *Files* folder in the recording directory:

| | | | |
|---------------------|------------------|---------------------|--------------|
| Annotations | 11-10-2013 13:19 | Bestandmap | |
| Annotations | 11-10-2013 13:19 | Bestandmap | |
| Tiles | 11-10-2013 15:06 | Bestandmap | 4 KB |
| ZC 2-layer_entities | 11-10-2013 14:10 | XML | 4,337 KB |
| Annotations | 11-10-2013 13:25 | SQlite Bestand | 922 KB |
| ZC frames | 8-4-2013 15:47 | XML | 4,403,338 KB |
| Ladybug | 8-4-2013 14:25 | CSV Bestand | 208 KB |
| Ladybug | 8-4-2013 14:25 | Horus Movie Play... | 2 KB |
| ZC layer_entities | 11-10-2013 14:40 | XML | 4,337 KB |
| Ligablaan | 11-10-2013 12:42 | SQlite Bestand | 13,383 KB |
| NH&A | 8-4-2013 14:25 | CSV Bestand | 9,262 KB |
| NH&A | 8-4-2013 14:25 | Horus Recorder File | 3,738 KB |
| shop | 9-10-2013 14:17 | Horus Recorder File | 3,738 KB |
| shop | 27-4-2013 15:01 | GPX Bestand | 3,738 KB |

Fig. 14- Tiles are saved in the Tiles folder

The downloaded map will be used when the recording is opened. The download function only downloads the selected type of map. Please note that the downloaded map only covers the travel path when there is no internet connection:

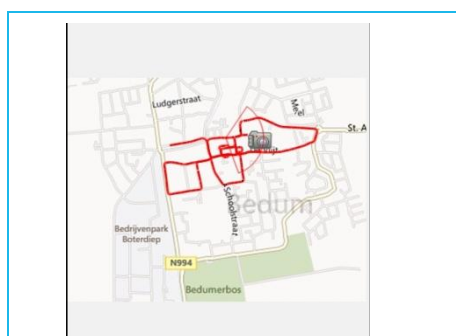


Fig. 15- Only the downloaded part is visible

3.3 Player controls - buttons

The player controls are located in the toolbar of the main screen. There are seven control buttons:

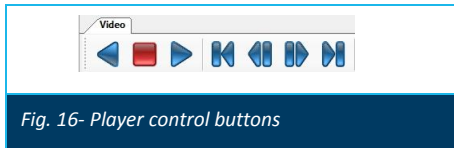


Fig. 16- Player control buttons

These buttons represent the following functions (from left to right):

Play backwards

Stop

Play

To start of recording

Previous frame

Next frame

To end of recording

3.3.1 Timeline

The timeline under the main screen allows you to scroll through the recording. By moving the slider to the left you move towards the beginning of the recording (an earlier point in time). By moving it to the right, you move towards the end of the recording (a later point in time).



Fig. 17- Timeline slide bar

3.4 Main screen cursor

The cursor in the main screen is used to look around in the images that the cameras have recorded. By holding the left mouse button down and moving the mouse, you can look around in the images.

The cursor in the main screen is projected on the ground level, it doesn't respond to vertical objects. It always represents the (virtual) ground level. The cursor changes color to indicate the accuracy of the measurements that are available at the indicated point. A blue cursor indicates that the accuracy is high; this is the case when the cursor is held closer to the camera. By moving the cursor away from the camera, the cursor will turn yellow and eventually red to indicate that accuracy has decreased:

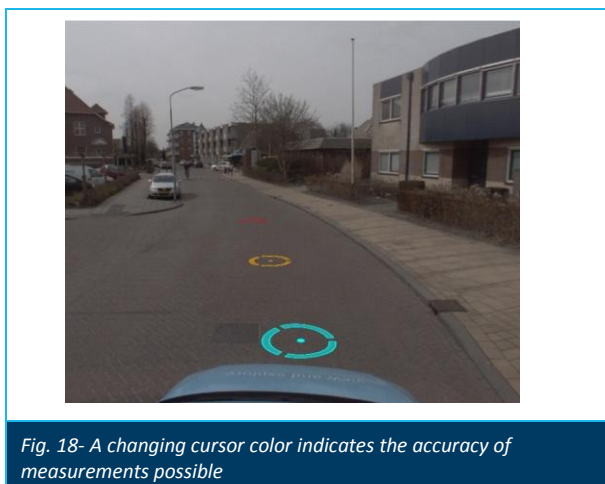


Fig. 18- A changing cursor color indicates the accuracy of measurements possible

3.4.1 Zooming in and out

To zoom in or out on the image in the main screen, you can rotate the mouse wheel, or use the zoom buttons above the main screen:

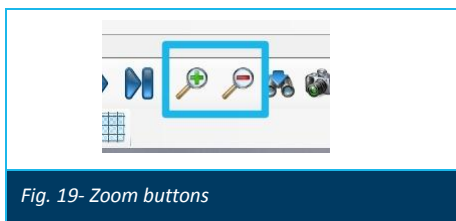


Fig. 19- Zoom buttons

3.4.2 Go to a specific frame number

With the *Go to frame* button you can enter the number of a frame. Click on the *Go to frame* button and fill in the frame number to immediately go to the specified frame:

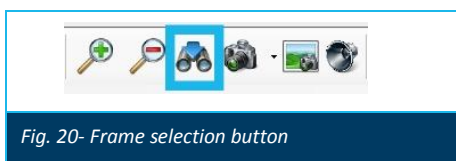


Fig. 20- Frame selection button

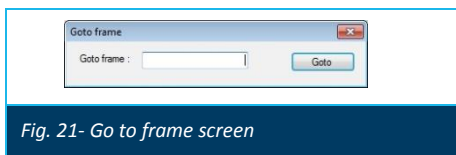


Fig. 21- Go to frame screen

3.4.3 Taking a snapshot

With the snapshot button you can take a snapshot from the viewpoint in the main screen. When clicking the camera button, the Movie Player takes a snapshot from all cameras. After the snapshot is made, the Movie Player will ask for a directory to store the snapshot. The default name for a snapshot is a combination of the GPS coordinates and the recording time and date:

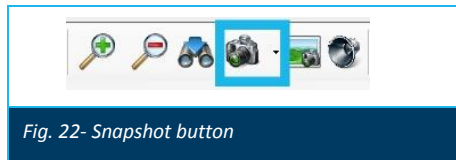


Fig. 22- Snapshot button

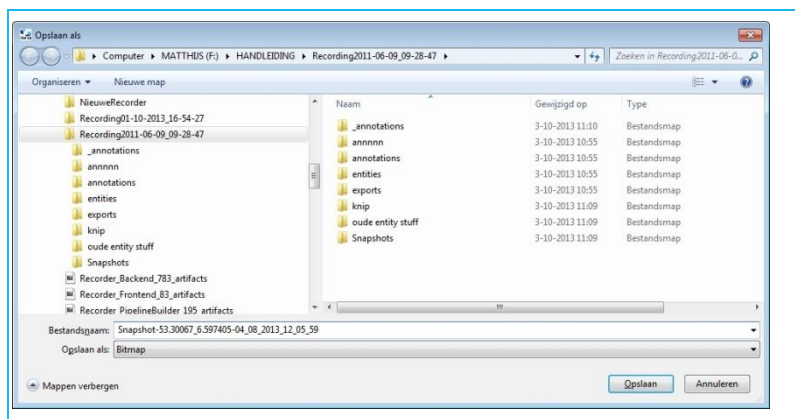


Fig. 23- Specify the directory to save the snapshot

3.4.4 Snapshot properties

You can set the snapshot properties, i.e. the size of the images, by clicking the arrow on the right of the snapshot button. After clicking this button, a small window will appear in which you can select the size of the image:

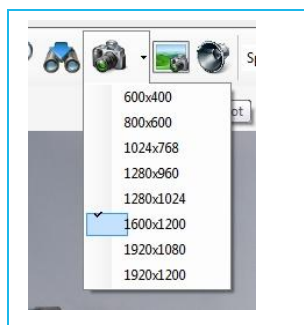


Fig. 24- Snapshot properties

3.4.5 Taking a panorama

The panorama button allows you to take a panorama from the current position. After the panorama is made, the Movie Player will ask for a directory to store the panorama (see 0).

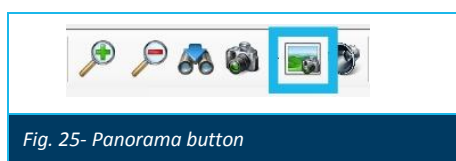
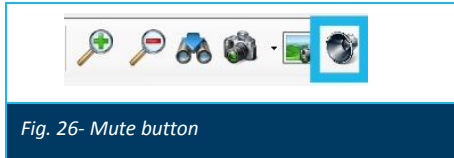


Fig. 25- Panorama button

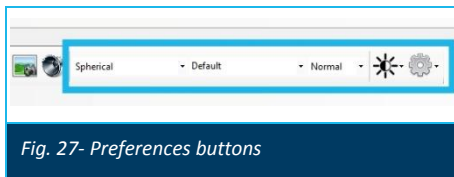
3.4.6 Muting the audio

If audio was recorded during the video-registration, the Movie Player will playback the audio simultaneously with the video. You can mute the audio with the Mute button. By clicking the Mute button again, the audio is switched back on:



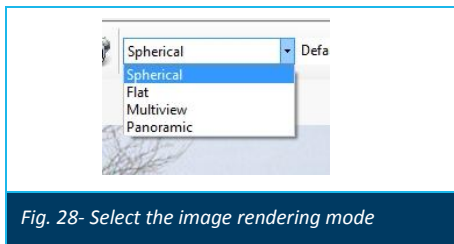
3.5 Player preferences

With the player preferences you can set and adjust the viewing mode and other settings of the Movie Player:



3.5.1 Image rendering mode

You can select the viewing mode (or image rendering) with the pull down menu in the player preferences:



3.5.2 Spherical view

The spherical view is the default mode for the Movie Player. In this mode all images are stitched together to form a seamless spherical view:



3.5.3 Flat view

In the flat view mode the images of all separate cameras are shown:

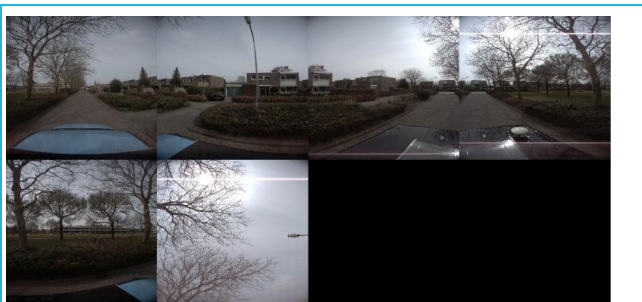


Fig. 30- Flat view

3.5.4 Panoramic view

In the panoramic view the image is shown as a flat panorama:



Fig. 31- Panoramic view

3.5.5 Multiview

In the multiview mode you can select the camera image you want to view in the main screen. In the multiview mode the Movie Player will show an extra screen with the images from all cameras under the map screen. By selecting one of these images, the Movie Player will show this image in the main screen:

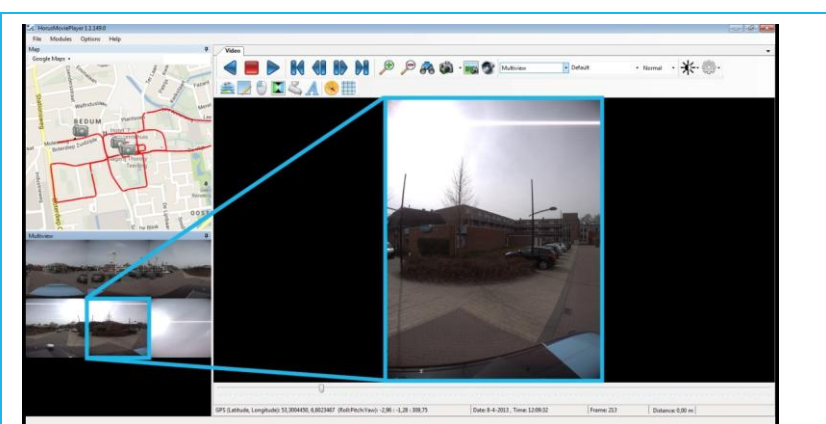


Fig. 32- Multiview

3.6 Rendering an external camera

The Movie Player is designed to be used on a single screen setup. However, if you want to work on a double screen setup, it is possible to render an extra camera view that can be placed (drag and drop) on an external display. To render an external screen, *render external camera* in the *Options* menu:

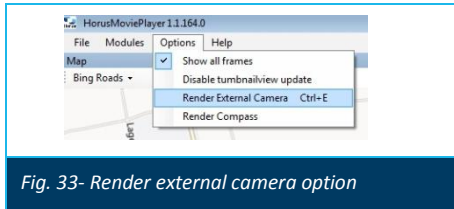


Fig. 33- Render external camera option

The *External window* will appear in the main screen, this screen is empty. The image in the external window will appear when the main screen image is refreshed (by pressing *Play* or the *Next / Previous frame* button):

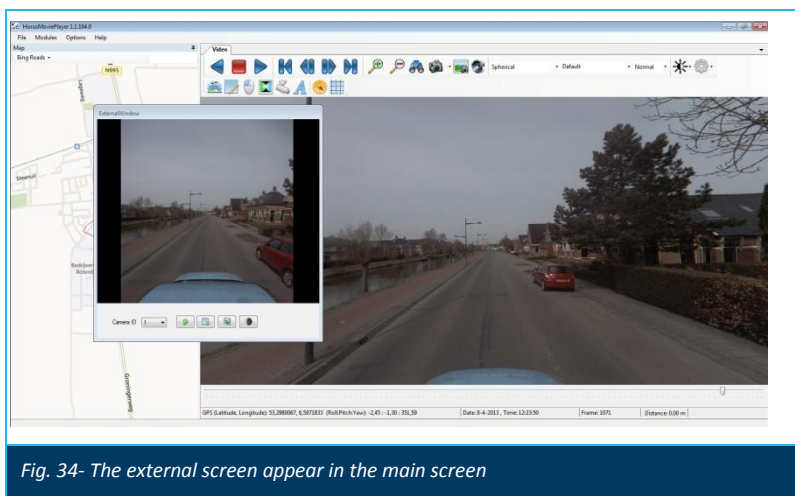


Fig. 34- The external screen appear in the main screen

The external screen has the following additional buttons:

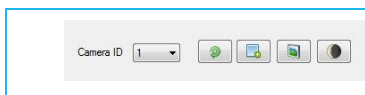


Fig. 35- External screen buttons

From left to right:

| | |
|---------------------|---|
| Camera ID | Select a camera from the pull down menu |
| Rotate screen | Rotate the screen 90 degrees clockwise |
| New external viewer | Opens an extra external viewer |
| Contrast | Adjusts the contrast automatically |
| Brightness | Adjusts the brightness (a slider will appear) |

3.6.1 Disable thumbnail viewer update

The thumbnail view in the Multiview mode (see 3.5.5) will load the stream from all cameras during playback. This requires a lot of data to be processed. Especially on older computers this may cause a decrease in system performance. The camera (and data) stream can be limited with the *Deactivate thumbnail view update* function. This function freezes the thumbnail update to increase the system performance. Click *Options* in the menu bar and check the *Disable thumbnail view preview* option:

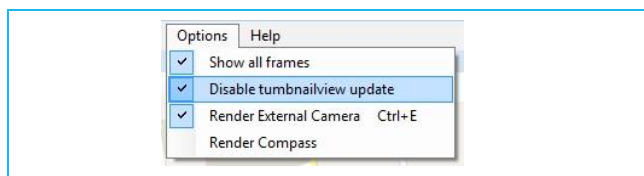


Fig. 36- Disable thumbnail viewer update

3.6.2 Playback speed

The playback speed can be set with the pull down menu in the player preferences. Click the pull down arrow and select the playback speed:

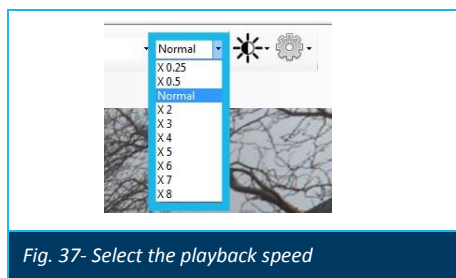


Fig. 37- Select the playback speed

3.6.3 Adjust the brightness

The brightness of the image in the main screen can be adjusted by using the brightness slider in the player preferences:



Fig. 38- Slidebar for adjusting the brightness

3.7 Camera settings

3.7.1 Adjusting the camera angles

When the camera angles in the main screen are offset, they can be adjusted by using the camera adjustment settings:

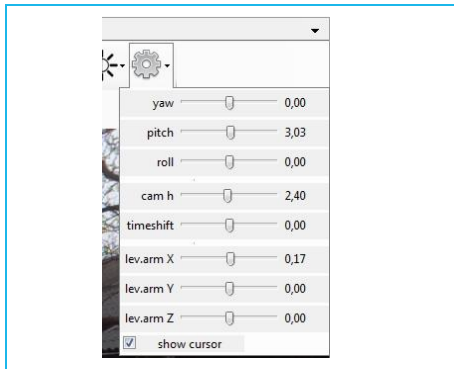


Fig. 39- Camera adjustment

With the *Jaw*, *Pitch* and *Roll* sliders the corresponding angles can be adjusted.

3.7.2 Adjusting the camera height

If the camera height in relation to the ground level is offset, the camera height can be adjusted with the *Camera h* slider.

3.7.3 Adjusting the time shift

The time shift indicates the time difference (caused by the vehicle speed and GPS lagging) from the actual recording location and the location measured by the GPS. When during playback the recording position on the map doesn't correspond with the location on the main screen, the *Time shift* slider can be used to synchronize the recording location and the GPS location.

3.7.4 Adjusting the camera position in relation to the GPS

The difference in the distance between the cameras and GPS antenna can affect the accuracy. To adjust this, the camera position in relation to the GPS antenna can be set with the sliders *Lev. Arm X*, *Y* and *Z*. By moving the slider, the position of the camera can be set up to 1 cm accurate.

3.7.5 Main screen cursor

The main screen cursor (see 3.4) can be activated or deactivated with the checkbox in the preferences menu:

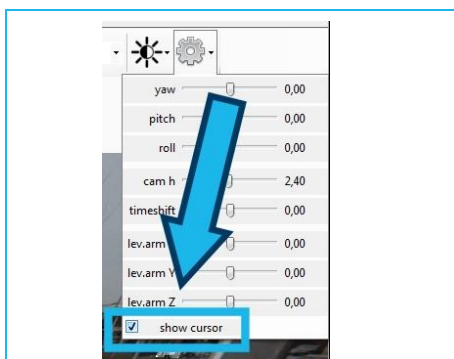


Fig. 40- The main screen cursor shows the accuracy of measurements

3.8 Compass and alignment axis

The compass and alignment axis help to determine the exact position of objects and the viewing direction in relation to the recording location. By clicking the *Compass* button, the Movie Player will project a compass on the camera position. With the *Alignment axis* button the alignment axis can be (de-)activated:



Fig. 41- Compass and Alignment axis buttons



Fig. 42- Compass on the recording location

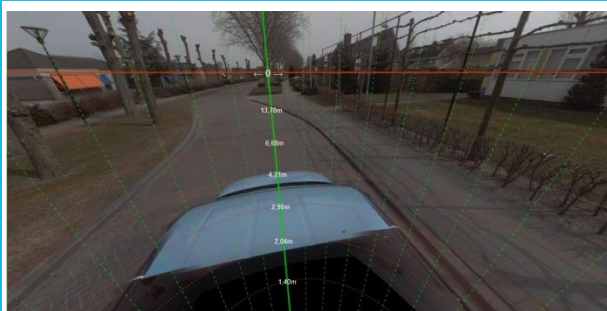


Fig. 43- Alignment axis

3.9 Exporting images and videos

The Movie Player can export a movie file with the *Export video* function in the *File* menu:

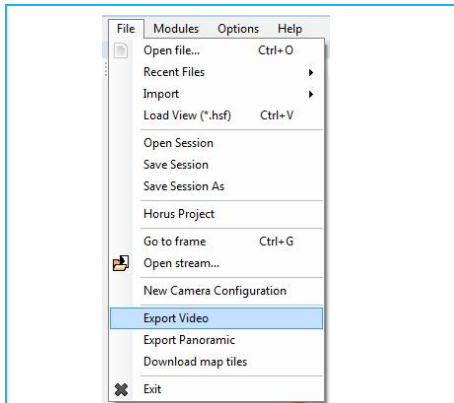


Fig. 44- Export video function in the File menu

The Movie Player will open a dialogue box in which you can specify the directory where the video must be saved:

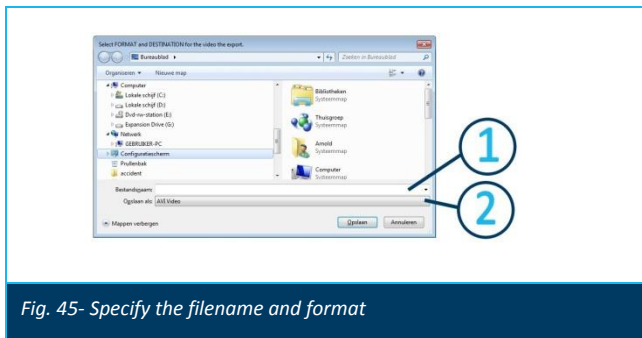


Fig. 45- Specify the filename and format

In this screen you can specify the filename (1) and the format (2). Click *Save* to export the video.

3.9.1 Export as .AVI

When exporting a recording to the .AVI format, you need to choose a compression program and the compression ratio in a dialogue box:



Fig. 46- Choose compression ratio

Click *OK* to proceed.

3.10 Saving a session

The *Save session* option allow you to save the current work session. When a session is saved the Movie Player stores all screens, settings, layers and annotations as they were on the moment the session was saved.

To save a work session, click *Save session* in the *File* menu:

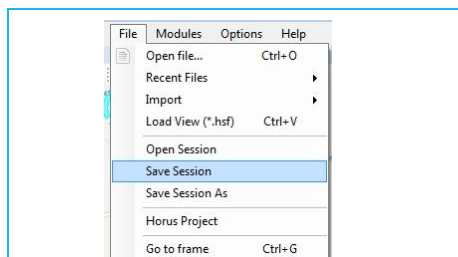


Fig. 47- Save session option

The Movie Player will ask for a directory to save the current work session. Click *Save* to save the work session in the specified directory:

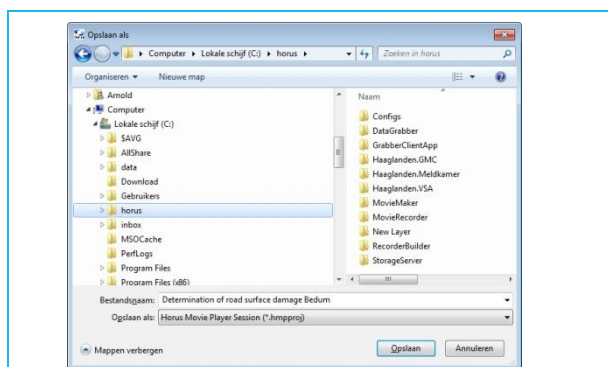


Fig. 48- Saving the current work session

3.10.1 Opening a saved work session

A saved work session is opened via the *Open session* option in the *File* menu:

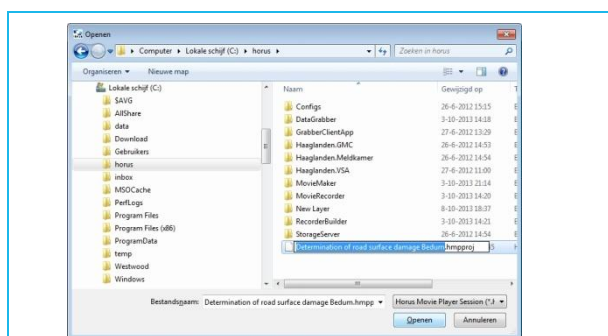


Fig. 49- Select the saved session

Select (one of) the saved session(s) and click *Open*. The Movie Player will load the saved work session and restore all screens, layers, et cetera.

4 Horus Project Builder

The Horus Project Builder is developed to keep track of the recordings and enables you to quickly oversee and open them in the Movie Player. The Project Builder generates a .kml file that can be opened in Google Earth. The travel paths of all recordings (in a specified) directory are displayed as colored lines in Google Earth. You can select a recording by simply clicking on a line. The recording will then be opened in the Movie Player.

The KML file can also be opened with the Layer Manager module. With this function you can switch rapidly between recordings. When you click on a line, a pop-up screen will show the name of the recording.

4.1 Creating a new Horus Project

To create a new Horus Project click *Horus Project* in the *File* menu:

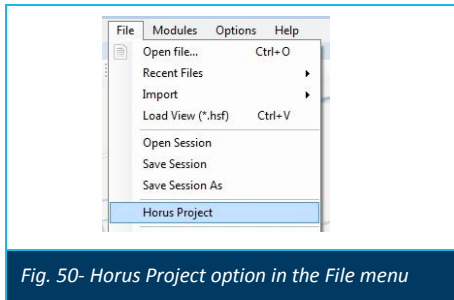


Fig. 50- Horus Project option in the File menu

The Horus Project Builder will open in a new window:

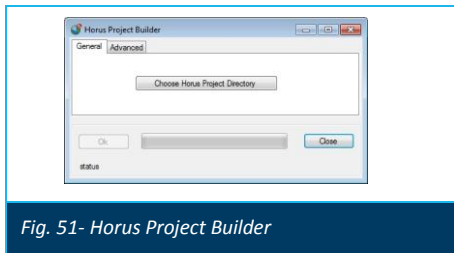


Fig. 51- Horus Project Builder

To create a new project, you have to specify the directory in which all (or the required) recordings are saved. Click the *Choose Horus Project Directory* button and select the directory. After that, click *OK* in the Project Builder screen. The Project Builder will search all recording in the specified directory:

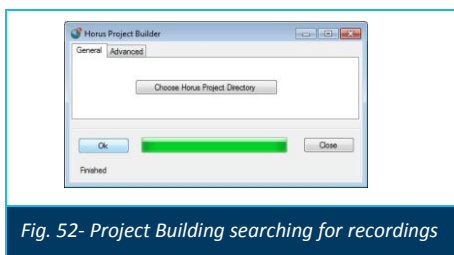


Fig. 52- Project Building searching for recordings

Click *Close* when the search is finished. The Project Builder has created a .kml file in the directory that was previously specified:

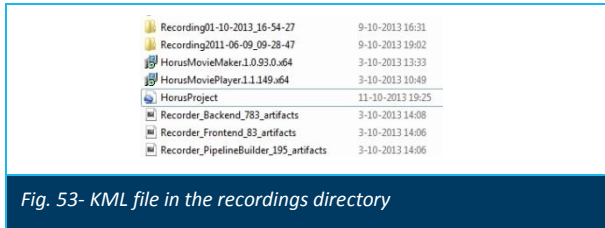


Fig. 53- KML file in the recordings directory

When this file is opened in Google Earth, the travel paths of the recordings are shown as colored lines. These lines are clickable and provide a direct connection to the Movie Player:

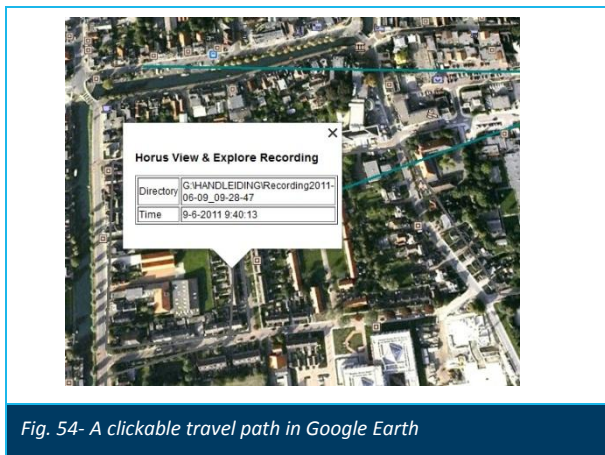


Fig. 54- A clickable travel path in Google Earth

5 Layer Manager module

With the Layer Manager module several layers can be added to the views in the Horus Movie Player. These layers are used for the actual inspection and survey activities. The Layer Manager is used to add and remove layers and to adjust their properties.

Layers are used to add information to the visual and geographical data. This information is added in the form of annotations, or 'features'. A feature can consist of a geometrical shape (like a line, polygon, height line), a point, a written annotation (a form) or a combination of the aforementioned. For more information see 0.

Layers are the foundation for the normal working routine with the I&S suite, it is therefore important to understand some basics of the 'inner workings' of the I&S suite. This is explained in paragraph 5.2.1.

5.1 Starting the Layer manager module

The Layer Manager is activated by clicking the Layer Manager button:



Fig. 55- Layer manager button

The layer Manager screen will appear beneath the main screen:

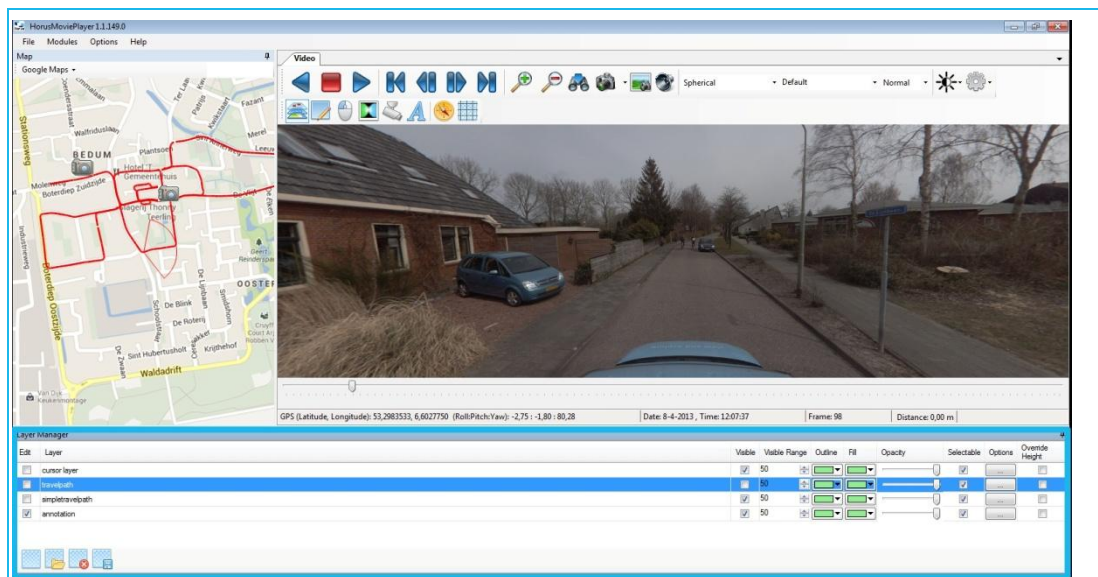


Fig. 56- Layer Manager screen in the bottom of the screen

5.1.1 Opening a layer (GIS/CAD)

To open an existing layer, click the *Import layer* button (see 5.2). The Movie Player will open the *Import Layer* screen:

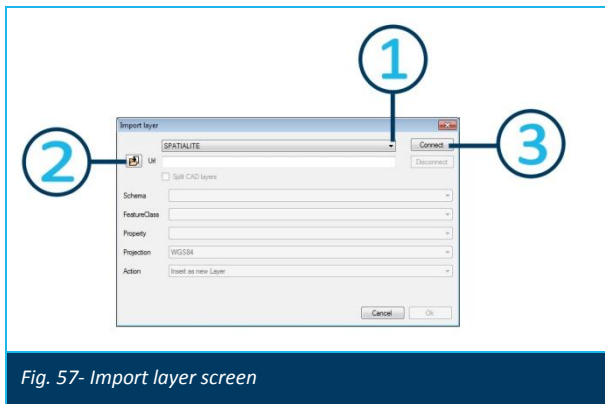


Fig. 57- Import layer screen

To import an existing layer, specify the type of data you want to import in the pull down menu (1):

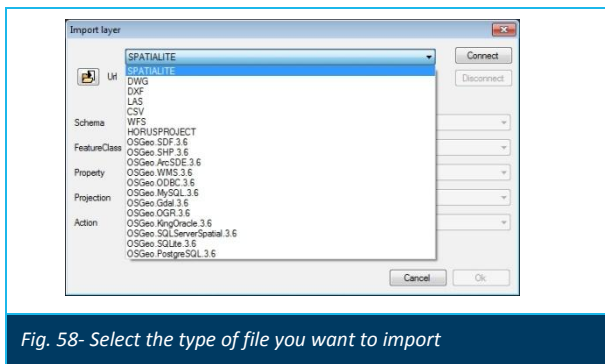


Fig. 58- Select the type of file you want to import

Click the *URL* button (2) and specify the directory of the data you want to import. After that, click the *Connect* button (3). The layer will now be loaded in the *Import layer* screen:

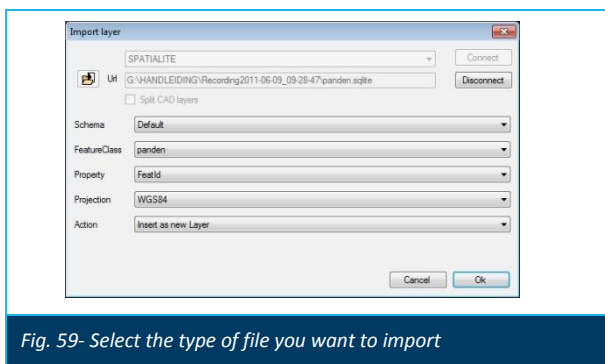


Fig. 59- Select the type of file you want to import

| | |
|---------------------|--|
| <i>Schema</i> | <i>Specifies the color scheme</i> |
| <i>FeatureClass</i> | <i>Specifies the Feature class to visualize</i> |
| <i>Property</i> | <i>Select the properties</i> |
| <i>Projection</i> | <i>Select the projection standard</i> |
| <i>Action</i> | <i>Define how the layer is imported in the layer manager</i> |

5.1.2 Editing of layers – activation and deactivation

With the *Edit* checkbox in the Layer manager, you can select the layer you want to edit. When the checkbox is marked the layer can be edited. You can only edit one layer at a time, the travel path and cursor layer cannot be edited:

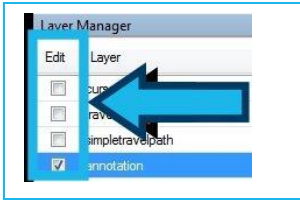


Fig. 60- Layer edit checkboxes

5.1.3 Visibility of layers

By activating (or deactivating) a layer is made visible (or invisible) in the main screen. A layer is activated by selecting the *Visible* box in the Layer Manager:



Fig. 61- Layer visibility checkboxes

5.1.4 Troubleshooting – layer visibility

It is possible that a layer is not immediately visible in the main screen. It may be necessary to move to the next (or previous) frame before the data is visualized in the main screen.

In case of a GIS layer, look up or down in the main screen, the GIS is most likely not projected on ground level. To do so, select the *Override height* box in the Layer Manager (see 5.1.8).

Also check the setting of the *Projection* field during the layer import (see 5.1.1); this must be set to *RD* for geodata.

5.1.5 Setting the visible range

The layers are rendered up to a certain distance from the cameras (or recording vehicle for that matter). This means that the layers (and the related annotations) are shown up to a certain distance. To increase or decrease the distance in which the layers need to be rendered, the *visible range* can be adjusted in the Layer Manager. By increasing the visible range, the layers will be rendered up to a larger distance from the cameras. Decreasing this distance will result in a smaller rendering distance:

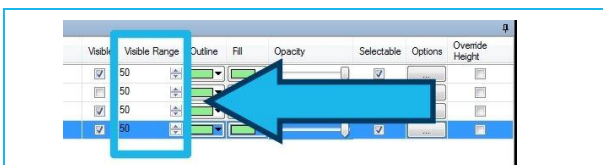
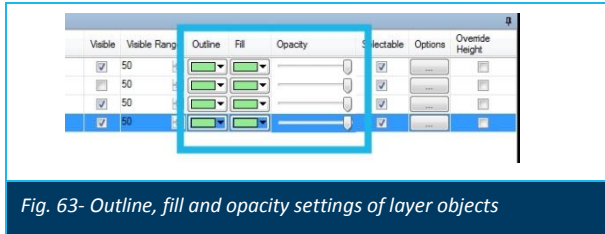


Fig. 62- Setting the visible range of the layers

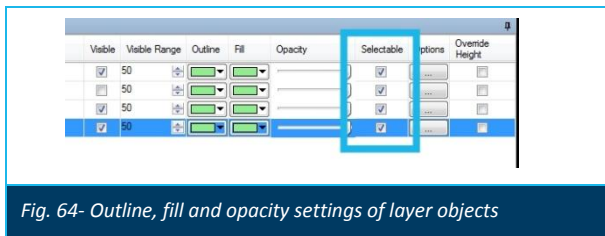
5.1.6 Adjusting the layer object colors

The color of objects in layers can be adjusted by using the pull down arrows in the *Outline* and *Fill* columns. Click the arrow and select the color, the new colors are in effect immediately and apply to all objects within that layer. The opacity can be altered by using the slide button in the *Opacity* column:



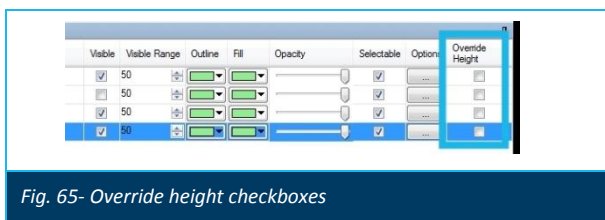
5.1.7 Making objects in a layer selectable

Objects in a layer are normally selectable, by selecting an object or annotation, the user can delete the object. To prevent annotations or objects from being deleted from a layer, the selection possibility can be turned off by unchecking the checkboxes in the *Selectable* column:



5.1.8 Override height

Normally, the Movie Player uses the ground level from the camera position as a reference for the spatial data in the layers. If the ground level reference from the layer data does not correspond with the measurements from the recording position, objects tend to 'float' above ground level. By selecting *Override height* all spatial data is projected on ground level. This can typically be used with data without a Z-coordinate:

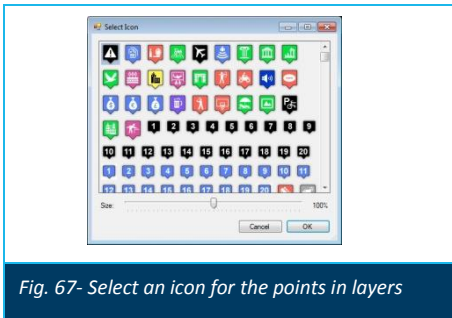


5.1.9 Selecting an icon for points in a label

In the Layer Edit module you can add 'points' in the image / layer. The points are indicated with an icon. With the *Options* button, you can select the icon you want to use within that layer. Click the *Options* button and select *Icon*:



The Movie Player will open a window in which you can select the icon you want to use. Click *OK* to confirm:



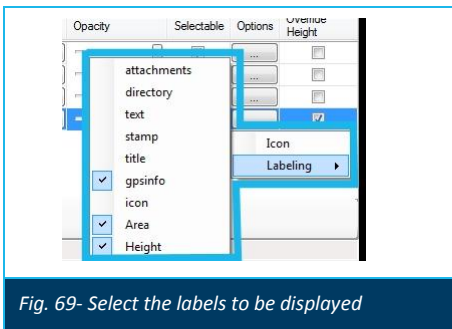
With the *Size* slider you can set the display size of the icons in the main screen.

5.1.10 Select layer labeling

Geometries can have several attributes by means of labels. These labels show information about the geometry, like length, surface area, geographical coordinates, etc. A geometry without labeling looks like this:



With the *Labeling* option you can select the labels you want to display. Check the labels you want to display:



This will result in a geometry with the selected labels:



5.2 Creating a new layer

In the left bottom corner of the Layer Module screen you'll see four buttons which are used to create, open, delete and save layers. This is described in the following paragraph.

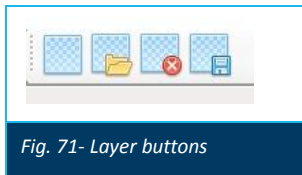


Fig. 71- Layer buttons

From left to right:

New layer

Import layer

Delete layer

Save layer

5.2.1 Creating a new form

Layers are used to annotate the images of the recording session. Normally, the *annotations* layer is started when a recording is opened, but the geometrical annotations (geometries) that are made in this layer do not have the possibility to add written annotations by means of a form. When you create your own layer, you can add textual information and a form to the geometries.

5.2.2 Creating an annotations form

If you want to create a layer in which you want to add both geometrical and written annotations, you need to create a form first. This form is needed when you create the new layer. The following paragraph is intended for users that are familiar with xml programming.

An annotations form is defined by the *entity.xml* file. This file is stored in the same folder as the recording. The *entity.xml* file can also be stored in the C:/Horus folder, if the file is stored in that folder, the form can be used in all recordings.

A file called *layer_entities.xml* does the same as the *entity.xml* file, but it defines forms for several layers. For this file you need to define an EntityDescription in which the *ID* refers to the layer it applies to. For instance: *ID=lampposts_basefile_rd* refers to the layer in which all lampposts are visualized.

The difference between the *entity.xml* file and the *layers_entities.xml* file can be seen in the first lines of the xml file. Because a *layer_entities.xml* defines multiple forms, the file starts with the `<EntityDescriptionCollection>` tag. Within these tags a set of EntityDescriptions are defined with the `<EntityDescriptions>` - `</EntityDescription>` tags.

To create a new *entity.xml* file, you can use an existing xml file from the recording directory:



| Naam | Gewijzigd op | Type | Grootte |
|--------------------|------------------|---------------------|--------------|
| annotations | 10-10-2013 20:40 | Bestandsmap | |
| frames | 8-4-2013 15:47 | XML | 921 kB |
| Ladybug | 8-4-2013 14:25 | DAT-bestand | 4.460.538 kB |
| Ladybug | 8-4-2013 14:25 | Horus Movie Play... | 249 kB |
| layer_entities | 19-9-2013 10:03 | XML | 4 kB |
| NMEA | 8-4-2013 14:25 | DAT-bestand | 15.163 kB |
| NMEA | 8-4-2013 14:25 | Horus Movie Play... | 9.282 kB |
| setup | 9-10-2013 14:17 | Horus Recorder file | 3.738 kB |
| setup.hsf.original | 22-4-2013 15:01 | ORIGINAL-bestand | 3.738 kB |

Fig. 72- The existing file is used to create a new form

You can open this file in the xml editor you prefer, Notepad.exe is usually well suited for quick editing tasks. You can now create your own form, using the command in the following section. Make sure to give the form a unique ID:

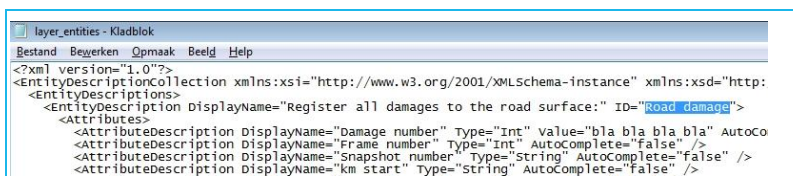


Fig. 73- The ID of the annotations form in the xml editor

5.2.3 XML Commands

The following xml commands are used for the annotations form

AttributeDescription

For example:

```
<AttributeDescription DisplayName="Type las" Type="Enum" AutoComplete="true" EnumValues="|Option 1|Option 2|Option 3|Option 4" />
```

```
<AttributeDescription DisplayName="Snapshot1" Type="Snapshot" Category="Snapshots" SnapshotFileNameFormat="Las_{las}-Been_{been}-1.jpeg" />
```

Displayname

Defines the name of the field, spaces are allowed

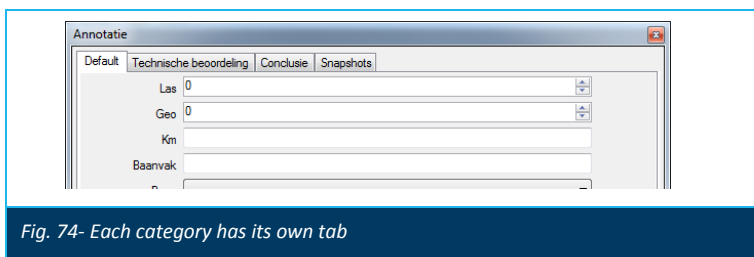
Type

Defines the type of field, the following values are valid:

| | |
|--------------------|---|
| <i>String</i> | <i>A line of tekst</i> |
| <i>Text</i> | <i>Multiple Lines of text</i> |
| <i>Int</i> | <i>An integer</i> |
| <i>Float</i> | <i>A number with decimals</i> |
| <i>Enum</i> | <i>Text with a limited list of valid values (see 0)</i> |
| <i>Date</i> | <i>A date (with time)</i> |
| <i>Attachments</i> | <i>One or more files on the computer. The path is stored, not the file itself</i> |
| <i>Icon</i> | <i>An icon, not used anymore</i> |
| <i>Snapshot</i> | <i>A print screen file. The path to the file is stored, the print screen itself is stored locally on the computer</i> |
| <i>Hyperlink</i> | <i>Hyperlink to a file or on the internet</i> |
| <i>CheckBox</i> | <i>A field that can be "yes" or "no". Is displayed as a checkbox</i> |

Category

Defines the category to which the attribute belongs. When the EntryDescription uses one or more categories, the program will create a tab for every category in the form:



Fields without a category will be placed in the 'Default' tab.

DefaultValue

The standard value for the field. This value is displayed in the field when a new annotation is created.

Hidden

Valid values: 'true' or 'false' (in lowercase!). Determines that a field is not visible in the form. When the field is present in the data, it will not be displayed in the form.

ReadOnly

Valid values: 'true' or 'false' (in lower case!). This command blocks the edit function of the field, i.e.: the field cannot be edited.

SnapshotFileNameFormat

Only applies to field of the 'Snapshot' type. Defines the name of the snapshots that are made. It is possible to use the values of other fields in the name of this field (the snapshot file name), this is done by writing that field name in braces, for instance:

Snapshot_feature_{id}.jpeg

This value of *SnapshotFileNameFormat* causes the snapshot of an annotation with the 'id' value of 45, to get the filename *Snapshot_feature_45.jpeg*.

Enum values

Only valid for the 'Enum' type fields. Contains valid values for the field, separated by the '|' symbol (alt + 0124). If you want the values 'one', 'two' and 'three' in the list of choices, you need to type: "one|two|three"

AutoComplete

Valid values: 'true' or 'false' (in lower case!). This command will result in an auto complete function when the user is filling in the form. The suggestions are formed by the values in other annotations.

AutoFill

This command will fill the field with a calculated value. The following values are possible:

| | |
|---------------------------|---|
| <i>FrameNumber</i> | <i>The number of the current frame that is being displayed</i> |
| <i>Geometry:Length</i> | <i>Only valid for lines. The total length of a line</i> |
| <i>Geometry:Area</i> | <i>Only valid for polygons that form a plane. The total surface area of the polygon in square meters</i> |
| <i>Geometry:Height</i> | <i>The height of a geometry in meters. The height is defined as the difference between the lowest and the highest part</i> |
| <i>Geometry:COG</i> | <i>The center of gravity of the geometry</i> |
| <i>Geometry:GetUnits</i> | <i>The unit in which the size of a geometry is expressed. 'm2' for polygons and 'm1' for lines</i> |
| <i>Geometry:GetAmount</i> | <i>The size of the geometry. Shows the surface area for polygons in square meters, and the total length in meters for lines</i> |

5.2.4 Adding a hyperlink field to a form

It is possible to add a field in the annotations form in which the user can specify a hyperlink. This requires the following line in the *AttributesDescription*:

```
<AttributeDescription DisplayName="Link" Type="Hyperlink" AutoComplete="false"/>
```

After you are finished editing, save the xml file to the recording directory.

5.3 Creating a new layer

By clicking the *New layer* button, the Movie Player will open the *New layer* dialogue box. In this box you can specify the type and the name of the layer:

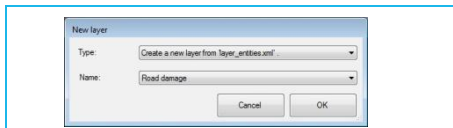


Fig. 75- New layer dialogue box

Select the form you have created from the pull down menus and click *OK* to proceed. Next you have to specify a directory for the new layer. It is recommended that you save the layer to the recording folder. Select the folder (or create a new one) in the dialogue box:

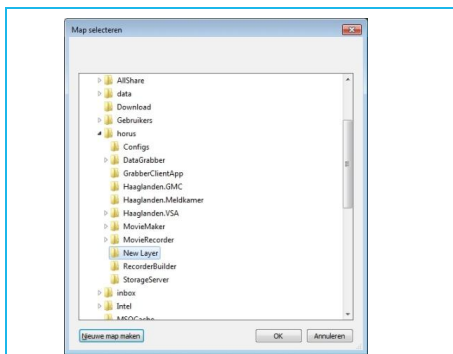


Fig. 76- Select a storage location

After this, the new layer is added to the layer manager:

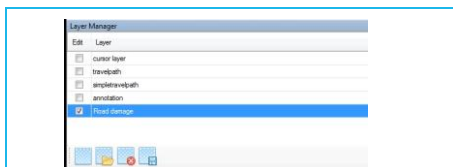


Fig. 77- New layer in the layer manager

After you have marked the checkbox in the *Edit* column, you can immediately start editing the layer. After you've added a geometry to the layer, the form that was just created will appear. You can also open the form by double clicking on existing geometries:

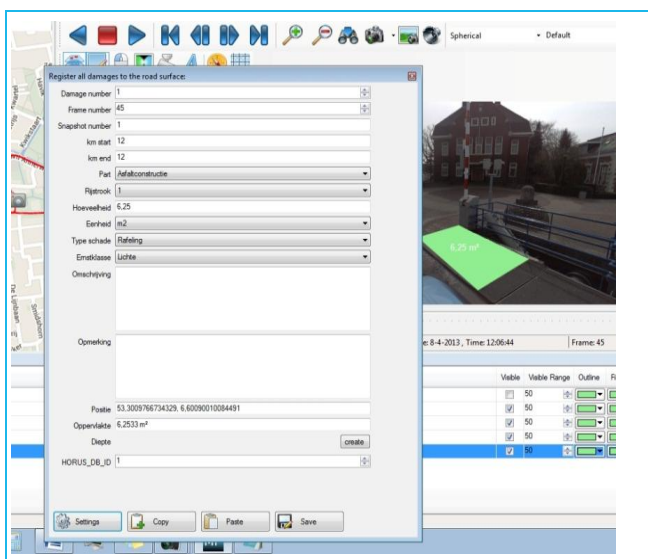


Fig. 78- Annotation form

5.3.1 Annotation form functions

The annotations forms have four buttons at the bottom. These buttons are used to copy and paste data from (or to) selected fields in the form:



Fig. 79- Buttons in the form

| | |
|-----------------|--|
| <i>Settings</i> | <i>Specifies the fields that are copied</i> |
| <i>Copy</i> | <i>Copies the specified field to the clipboard</i> |
| <i>Paste</i> | <i>Paste the copied fields</i> |
| <i>Save</i> | <i>Saves the data in the form.</i> |

With the *Settings* button you can select the fields you want to copy with the *Copy* button. Select the fields by marking the checkboxes:

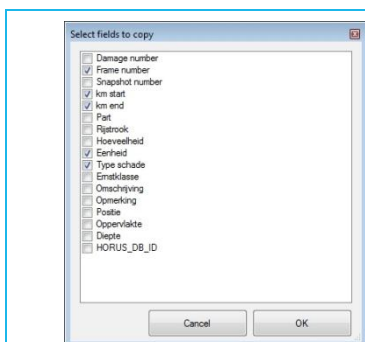


Fig. 80- Fields to copy within forms

The copied data can quickly be transferred from one form to another to speed up your working process.

5.3.2 Adding a hyperlink to an annotation

If the form has a *Hyperlink* or *Link* field, this field will have to edit buttons on its right side:



Fig. 81- Hyperlink / local link edit buttons

These buttons allow you to edit /specify the hyperlink. The pencil button is used to fill in a hyperlink. Always use the full URL, including `http://` :

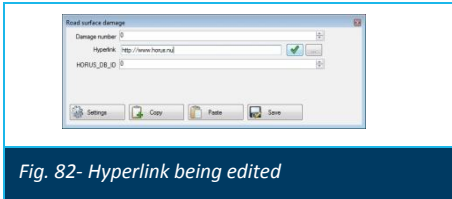


Fig. 82- Hyperlink being edited

To finish editing, click the checkmark. The other button (...) is used to specify a link to a file on your computer.

5.3.3 Select the import action

The imported layer data can be processed in three ways: Insert as a new layer, convert to a spatialite layer, merge with the standard annotation layer, or merge with another layer:

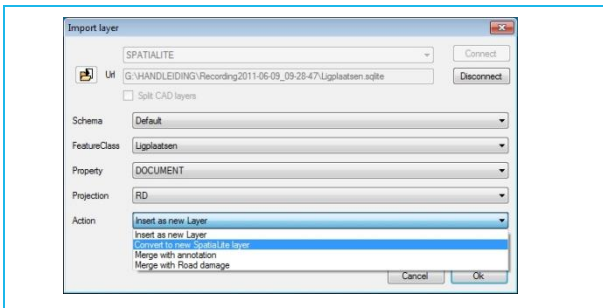


Fig. 83- Select how the data must be imported

5.3.4 Import as spatialite layer

A spatialite layer is highly recommended when you have to annotate a large amount of geometries. A spatialite layer allows you to store the annotations and open them at a later time. This allows you continue to work without having to annotate all geometries in one session. When all annotations are made, you can export the layer to another format, for instance GIS or CAD data.

5.3.5 Merge with an existing layer

You can merge the data with an existing layer by choosing the option *Merge with...* You can merge with any already open and editable layer.

5.3.6 Import as a new layer

If you want to insert the data as a new layer, choose the option *Insert as new layer*.

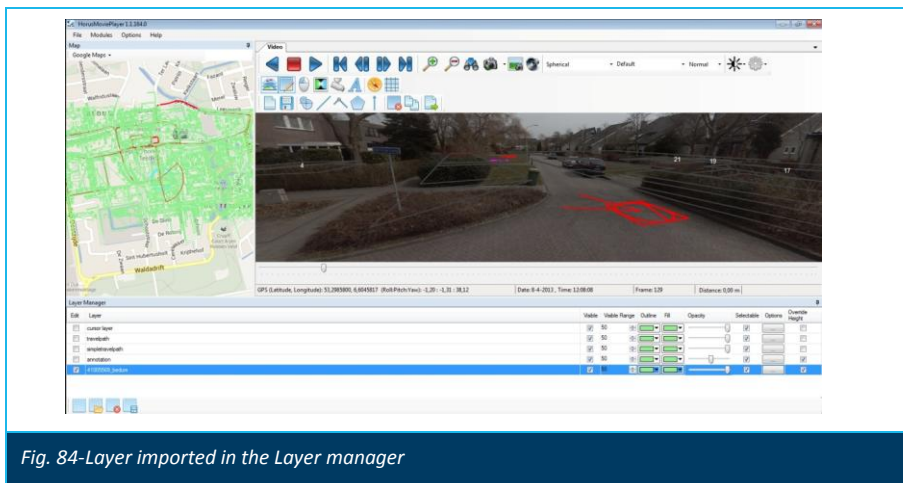


Fig. 84-Layer imported in the Layer manager

In the figure above the new layer is projected on the map data and in the main screen. If the imported data is not visible in the main screen, refresh the image by clicking the *Play* or *Forward* button. In this example the *Override height* checkbox is marked (see 5.1.8) because the data in this layer misses height information (no Z-coordinates recorded). With the *Options* button you can select the labeling that is visualized in the main screen (see 5.1.10)

5.3.7 Show attribute data of geometries

The geometries in the screen are clickable. By double clicking a geometry, the attribute data of the selected geometry is shown:

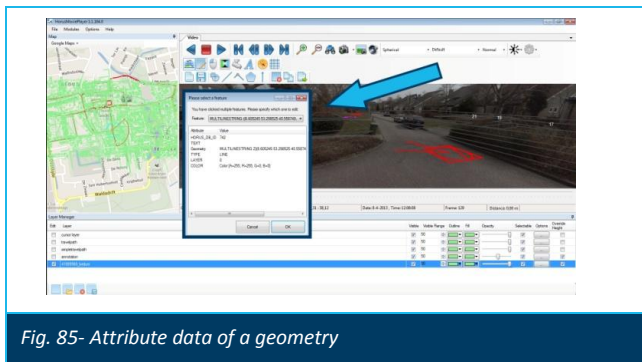


Fig. 85- Attribute data of a geometry

By pressing the *F1* key, the Movie Player will open the last selected objects attribute data form.

5.3.8 Add a preset number to a data form

When you have selected an object and you want to retrieve the attribute data form at a later moment, it is possible to add a preset number to that object and its data form. This is done by pressing *Ctrl* and a *F* key. By pressing *Ctrl* + *F2*, Movie Player will store the objects form, it can later be retrieved by pressing the *F2* key. You can use the *F*-keys in the range from *F2* to *F8*, so you can set seven presets for data forms.

5.3.9 Show annotations form of a geometry

By right-clicking a geometry the attached form (see 5.2.1) will be opened:

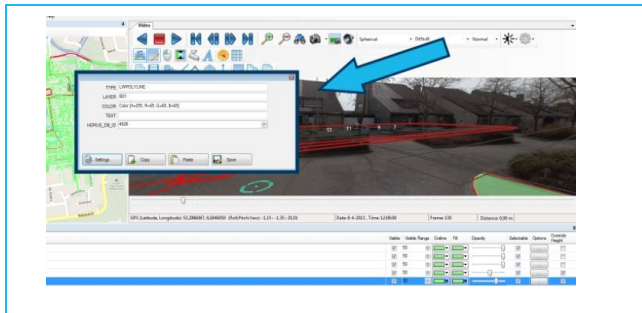


Fig. 86- The form attached to the selected geometry

5.3.10 Deleting a layer

If you want to delete a layer, select the layer in the Layer manager and click the *Delete layer* button (see 5.3.10). The Movie Player will ask for confirmation before the layer is deleted:

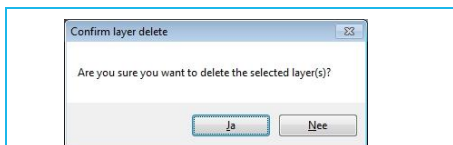


Fig. 87- Deleting a layer

5.3.11 Exporting a layer

A layer can be exported using the *Export* button. Select the layer you want to export and click the *Export* button, the Movie Player will open the *Layer Export* screen:

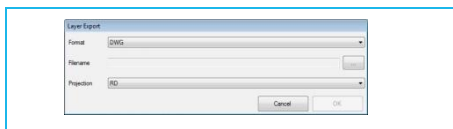


Fig. 88- Layer export screen

You can select the format for the export file by clicking the pull down arrow:

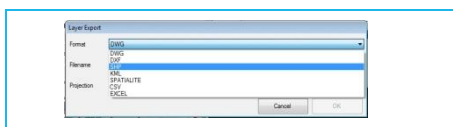


Fig. 89- Select the format for the export file

Next, you can specify the projection standard:

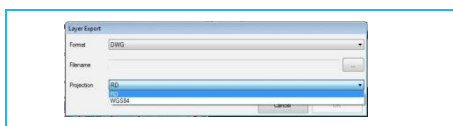


Fig. 90- Select the projection for the export file

Set the export directory and the file name with the (...) button. The default filename for a spatialite file is the name of the selected layer (for instance *Annotations*). Click *OK* to start the export. During the export, a progress bar is displayed.

5.4 Export to Excel

If you want to export your data to excel, a .xls template should be used. To place your attribute data in the right columns, please make the field according to the names in the annotations Put the names in the excel template between { } signs.

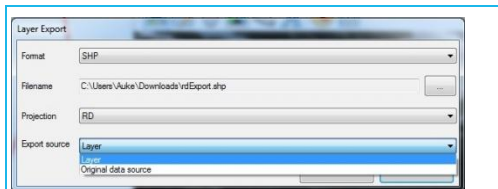


Fig. 91- Export to Excel

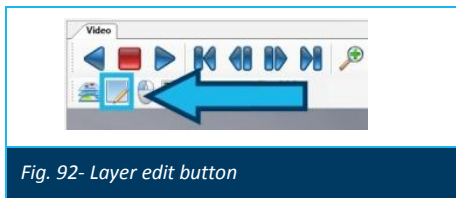
5.4.1 Select the export source

You can select two data sources for the layer export:

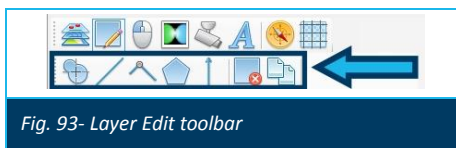
Layer, by selecting this option, Movie Player will export only the data that is present in the layer. *Original data source* will export all data that is present in the original data source.

6 Layer Edit module

The Layer Edit module allows you to perform measurements, add shapes and annotations to an editable layer. This chapter describes the functions of the Layer Edit module.



The Layer Edit module is activated with the *Layer edit* button. When the Layer Edit module is activated, the edit buttons will appear in the toolbar:



From left to right:

Open

Save

Add point

Add line

Add multiline

Add polygon

Add height line

Delete geometry

Export

6.1 Geometries

The Layer edit module allows you to annotate points and objects in the images by creating a geometry. These geometries are linked to the GPS coordinates and they are projected on the image in the main screen. This means that the GPS information is leading for the exact size and shape of geometries, not the image data.

When creating a geometry, it is important to maintain the highest possible accuracy. This is determined – as stated – by the GPS coordinates. The accuracy for (possible) measurements is indicated by the color of the cursor in the main screen. The accuracy decreases when the cursor is moved away from the recording position. The color of the cursor will change to orange and red to indicate a decreased accuracy:



Fig. 94- A changing cursor color indicates the accuracy of measurements possible

6.1.1 Estimating measurements

The cursor can be used as a reference object to estimate measurements and angles of objects in the main screen. By pressing the *Shift* button and using the scroll wheel on the mouse, the cursor will project a circle of the desired diameter on ground level:



Fig. 95- Projecting a circle on ground level

By pressing the *Alt* key and using the scroll wheel on the mouse, the cursor will project a mast of the desired height:



Fig. 96- Projecting a mast in the main screen

By pressing the *Shift* and *Alt* key and scrolling the mouse wheel, a cone will be projected in the main screen. This can be used to estimate the angle of objects in the main screen:

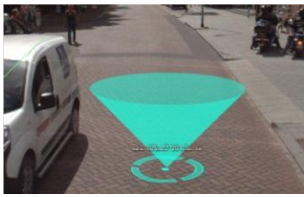


Fig. 97- Projecting a cone in the main screen

6.1.2 Adding a point

You can add a so called 'point' to any location in the image. Points are used to indicate areas or objects of interest and can be accompanied by an annotation on a form. A point will be placed on ground level in the annotations layer (see 6.1.1)

To add a point to the image, click the *Add point* button:



Fig. 98- Add point button

A small crosshair will appear with the cursor in the main screen, this indicates that the 'Add point' function is active:



Fig. 99- Cursor with crosshair

By clicking the left mouse button a point is added to the image and geometry. The point is shown in both the map screen and the main screen:

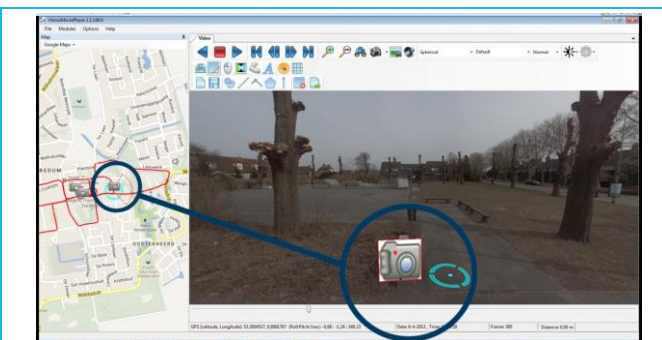


Fig. 100- The added point is shown in the map screen and the main screen

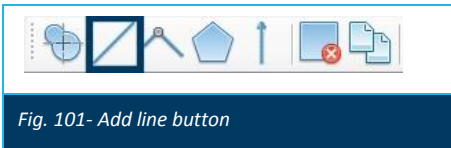
A point can be moved by clicking the left-clicking and holding the Shift button.

6.1.3 Changing the icon for a point

The icon that is used to indicate a point can be changed. This is described in paragraph 5.1.9

6.1.4 Adding a line (length measurement)

With the *Add line* button you can add lines to the image / geometry. This function can also be used to perform measurements on ground level. To add a line / perform a length measurement, click the *Add line* button:

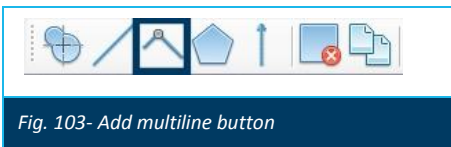


A small crosshair will appear with the cursor in the main screen, this indicates that the 'Add line' function is active. To draw a line, left click on the point where you want to start the line, pull the line to its end point and left click again. The length of the line is shown on ground level:



6.1.5 Adding a multiline

A multiline is used to measure non-straight lines. Click the *Add multiline* button to draw a multiline:



A small crosshair will appear with the cursor in the main screen, this indicates that the 'Add multiline' function is active. To draw a line, left click on the point where you want to start the line, pull the line to a between point and left click. You can add as much 'in between points' as needed. To end the multiline, right click. The length of the multiline is shown on ground level:



6.1.6 Adding a polygon

The polygon is used to annotate areas on ground level, the Layer Edit module calculates the surface area immediately.

Click the *Add polygon* button to draw a polygon:



A polygon is defined by its edges, by left clicking, the edges are placed in the image / geometry. To define the final edge of the polygon, right click. The Layer Edit module immediately calculates the surface area of the polygon:



Depending on the layer settings (see 5.2.1) a form can be attached to the polygon (or other shapes that you draw). In this form you can add additional information about the shape / form.

6.1.7 Adding a height line

Height lines are used to measure / indicate heights of objects in the images. For height measurement it is important to be as close to the object as possible. To draw a height line, click the *Add height line* button:



Move as close to the object you want to measure and place the start point of the height line on ground level by left clicking. Pull the line upwards to the top of the object and right click to define the end point of the height line:



6.1.8 Deleting a geometry

To delete a geometry, select the geometry by left clicking it. The index finger symbol in the cursor indicates that an object is selectable. A selected object is marked with a red outline:

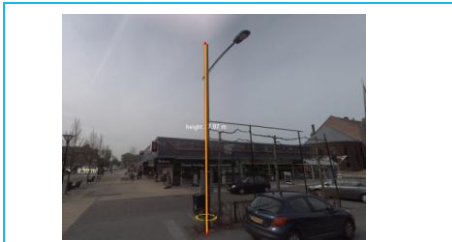


Fig. 109- A selected geometry

To delete the selected geometry, click the *Delete geometry* button:



Fig. 110- Delete button

The *Delete geometry* button is not shown when no geometry is selected. The Layer Edit module will ask for confirmation to delete the geometry / annotation. Click *OK* to confirm.

6.1.9 Clone geometries

A geometry can be cloned with the *Clone geometry* button:



Fig. 111- Clone geometry button

To clone a geometry, select the geometry in the main screen and click the *Clone geometry* button. The Layer Edit module will place a clone over the existing geometry. The cloned geometry may not seem visible, but when you select and move the geometry, the original geometry will remain on its position whilst the clone can be re-positioned.

6.2 Height Profiler

The Height Profiler module enables the Movie Player to display a height profile of the travel path. A height profile can only be displayed when height data was recorded during the recording session. To activate the Height Profiler, click *Height Profiler* in the *Modules* menu:

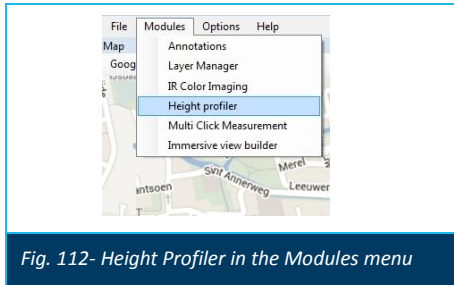


Fig. 112- Height Profiler in the Modules menu

6.3 Multi click measurement

The multi click measurement function is used to measure surface areas that are not on ground level. The multi click measurement is performed by defining the corners (points) from different recording locations. The Movie Player can calculate the surface area using the spatial data and GPS info.

To perform a multi click measurement, click the *Multi click measurement* button:

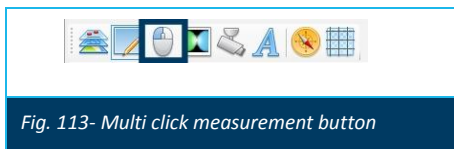


Fig. 113- Multi click measurement button

The multi click measurement menu will appear in the bottom of the screen:

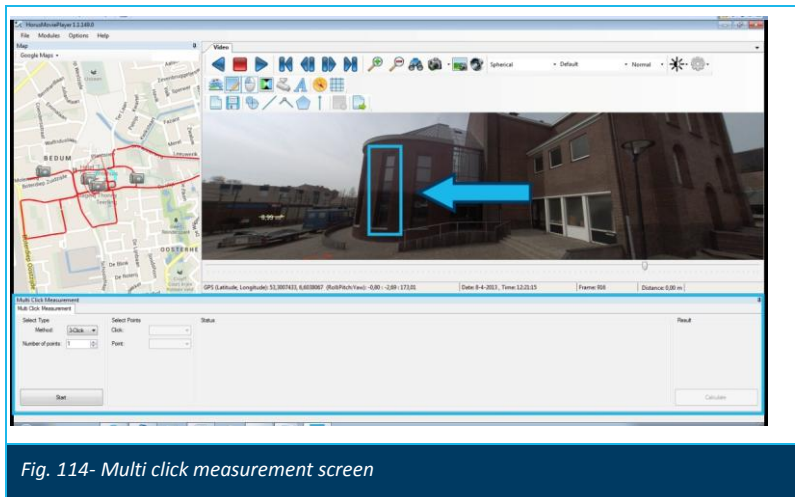


Fig. 114- Multi click measurement screen

In this example the surface area of the large window in the main screen (indicated with the blue rectangle) will be measured.

The multi click measurement can be performed by two methods: the 3-click and 5-click method. The 3-click method uses the spatial data from 3 frames, the 5-click method uses the data from 5 frames and is the most accurate. For the measurement of the window in this example, the 3-click method is sufficient, therefore, the 3-Click method is selected (1). After that, you need to specify the number of points you need for the measurement. In this case (a rectangular shape) four points are needed (2):

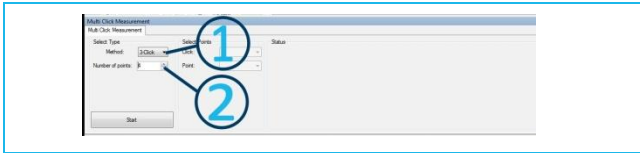


Fig. 115- Defining the MCM settings

To start the measurement, click the *Start* button.

When the multi click measurement is started, the following warning appears:

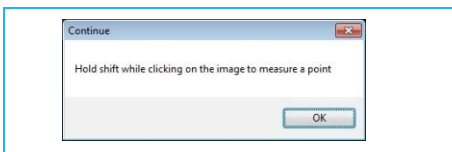


Fig. 116- Multi click measurement warning

To start the multi click measurement, click on the corners of the shape while holding the Shift key. The points (or edges of the rectangle) will appear in the boxes of the *Status* field:

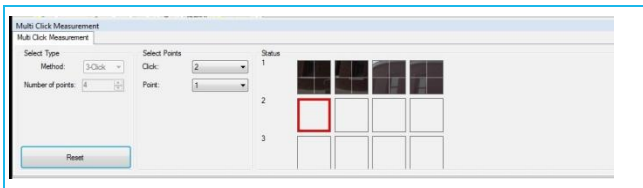


Fig. 117- The selected points appear in the boxes

After the first set of points is selected, the multi click measurement shows this screen, a warning to proceed to the next frame. Click *OK* to continue:

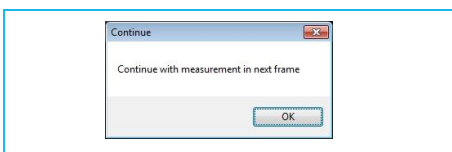


Fig. 118- Move to the next frame warning

To move to the next frame, click the *Next frame* button in the player controls (see0) and select the points of the shape from the recording position of this frame. **Select the points in the same order as in the previous frame!**

After all points have been selected in the consecutive frames, the multi click measurement will confirm this with the following message. Click *OK* to continue:

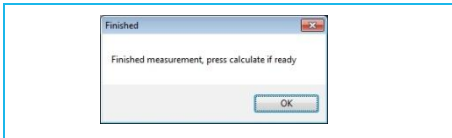


Fig. 119- Multi click measurement finished

The *Calculate* button will appear in the bottom right corner of the multi click measurement screen. Click this button to calculate the surface area:

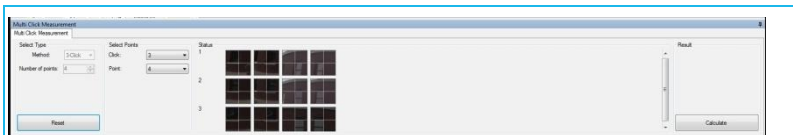


Fig. 120- Multi click measurement screen with finished selection

The surface area that is calculated is shown in the main screen:

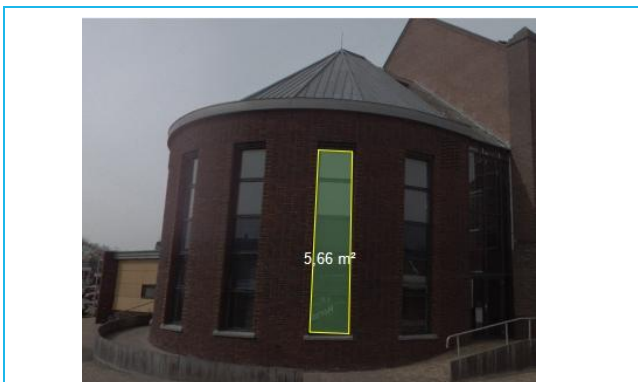


Fig. 121- Result of the multi click measurement

The geometry that is projected on the image, will 'stick' to the object in the image. The annotation will be visible from other recording positions:

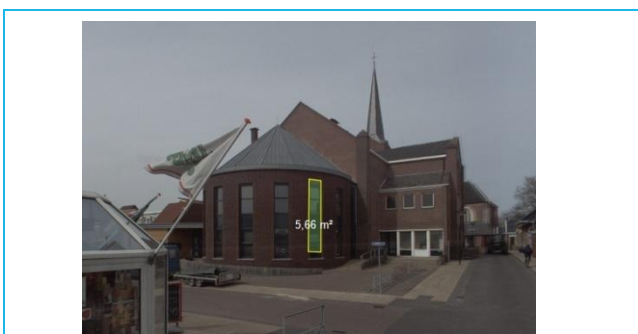
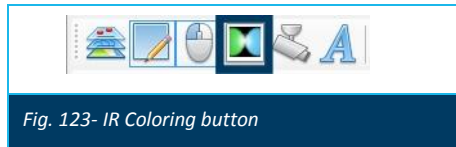


Fig. 122- The annotation seen from another recording location

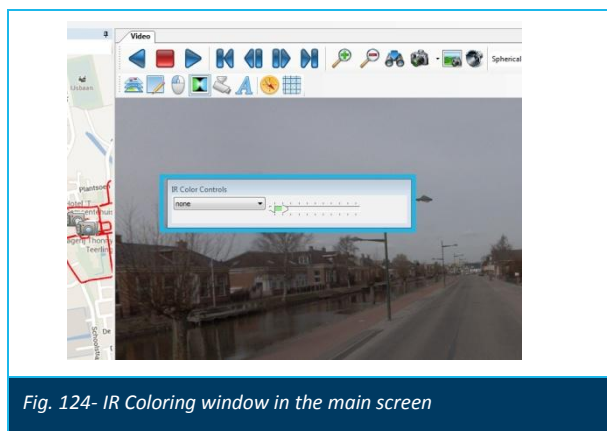
7 IR coloring module

The IR coloring module is used to visualize the images from IR cameras. With this module you can select rendering methods and set the visualization for the IR-rendering. To use this module, it is necessary that the images were recorded with a thermal IR-camera. Otherwise, the IR coloring module will simulate an IR visualization.

To start the IR coloring module, click the *IR Coloring* button in the main screen:

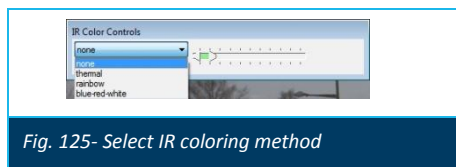


When the IR Coloring is activated, a small window will appear in the Movie Player:



7.1 Select an IR rendering method

By clicking the pull down button in the IR coloring window, you can select the IR coloring method:



7.1.1 IR coloring: thermal rendering

By selecting the *thermal* rendering, the image in the main screen will be shown in the thermal IR rendering method:



7.1.2 IR coloring: rainbow rendering

By selecting the *rainbow* rendering, the image in the main screen will be shown in the rainbow IR rendering method:



Fig. 127- IR image in the rainbow rendering

7.1.3 IR coloring: blue –red-white rendering

By selecting the *blue-red-white* rendering, the image in the main screen will be shown in the blue-red-white IR rendering method:



Fig. 128- IR image in thermal rendering

7.1.4 Adjusting the IR coloring

By using the slider in the IR Coloring window, the color spectrum of the IR rendering can be adjusted:

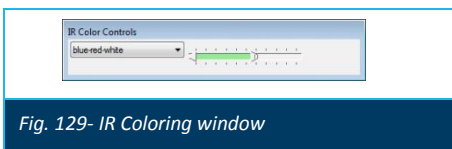


Fig. 129- IR Coloring window

7.2 Deactivating the IR Coloring

The IR Coloring module can be deactivated by clicking the *IR Coloring* button or unchecking the *IR Color imaging* option under *Modules* in the menu bar:

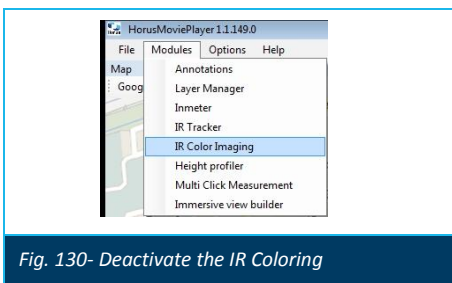
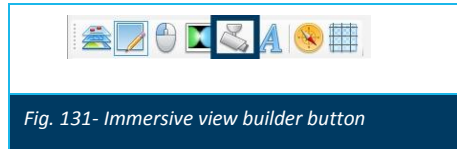


Fig. 130- Deactivate the IR Coloring

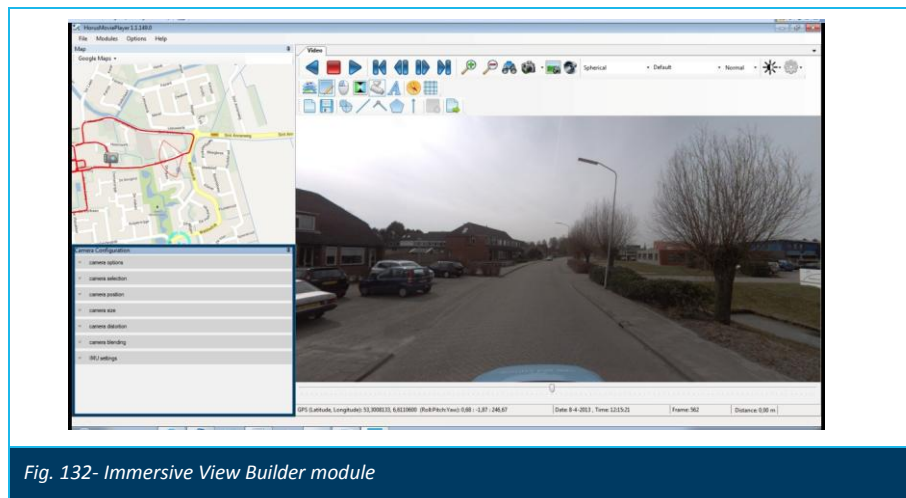
8 Immersive View Builder module

The Immersive View Builder allows you to stitch the camera images together in order to create an immersive view. The immersive images are used in the spherical rendering in the main screen (see 3.5.2).

The Immersive View Builder module is activated with the *Immersive view builder* button:



The Immersive view builder opens in the left bottom of the Movie Player, below the map:

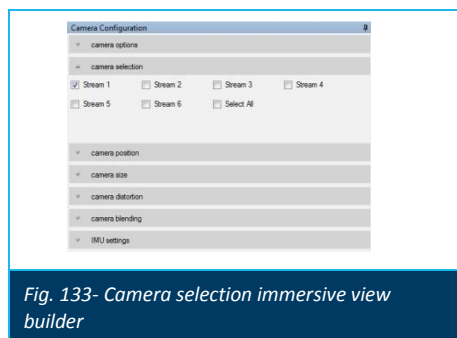


8.1 Building an immersive view

8.1.1 Select a camera

The number of camera streams that is available to build an immersive view is shown in the *Camera selection* field. It is recommended to build the immersive view with one camera at a time. It can also be useful to use the alignment axis (see 3.8).

To start building an immersive view, select a camera:



8.1.2 Determine the image position

The image from the camera that you have selected is displayed in the main screen. In this example, a Ladybug camera is selected, these film in landscape mode:

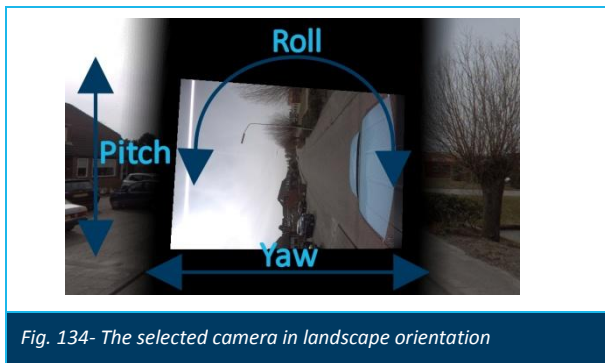


Fig. 134- The selected camera in landscape orientation

To adjust the orientation, use the *Yaw*, *Pitch* and *Roll* dials in the *Camera position* tab:

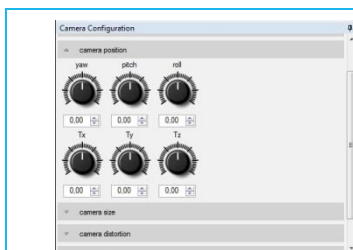


Fig. 135- Camera position dials

| | |
|--------------|--|
| <i>Yaw</i> | <i>Rotation around the Z-axis (image moves left-right)</i> |
| <i>Pitch</i> | <i>Rotation around the X-axis (image moves up-down)</i> |
| <i>Roll</i> | <i>Rotation around the Y-axis (image turns around)</i> |
| <i>Tx</i> | <i>Position of the image on the X-axis</i> |
| <i>Ty</i> | <i>Position of the image on the Y-axis</i> |
| <i>Tz</i> | <i>Position of the image on the Z-axis</i> |

With the *Tx*, *Ty* and *Tz* dials the position of the image in the screen can be set.

8.1.3 Adjust the image size

The size of the image can be adjusted using the dials in the *Camera size* tab:

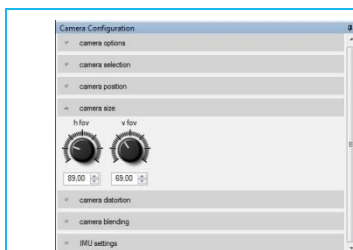


Fig. 136- Camera size dials

| | |
|--------------|------------------------|
| <i>H fov</i> | <i>Horizontal size</i> |
| <i>V fov</i> | <i>Vertical size</i> |

The height and width of the image can be set with these dials. When the orientation is set correctly, the height and width adjustments will result in an almost seamless fit with the other images:



Fig. 137- By correcting the width, the overlap will fit

With minor adjustments to the positions and height / width, this will be the result. There are minor overlap differences on the marked locations:



Fig. 138- Minor overlap issues.

8.1.4 Blend the overlap

By blending the overlap, the immersive view will gain smooth overlaps which are almost invisible. The blending is adjusted with the dials in the *Camera blending* tab:

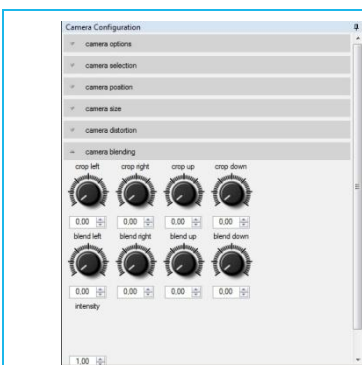


Fig. 139- Blending dials

- | | |
|--------------------|--|
| <i>Crop left</i> | <i>Crops the image on the left side (in portrait mode)</i> |
| <i>Crop right</i> | <i>Crops the image on the right</i> |
| <i>Crop up</i> | <i>Crops the image on the upper side</i> |
| <i>Crop down</i> | <i>Crops the image at the bottom of the image</i> |
| <i>Blend left</i> | <i>Adjusts the blending on the left side</i> |
| <i>Blend right</i> | <i>Adjusts the blending on the right side</i> |
| <i>Blend up</i> | <i>Adjusts the blending on the upper side</i> |
| <i>Blend down</i> | <i>Adjusts the blending at the bottom of the image</i> |

8.1.5 Correct the camera distortion

The distortion of the camera lens may cause difficulties when stitching the images. The camera distortion can be adjusted with the dials in the *Camera distortion* tab:

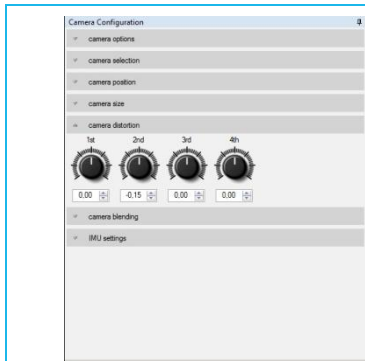


Fig. 140- Camera distortion correction dials

- 1st
- 2nd *Mustache distortion*
- 3rd *Pincushion distortion*
- 4th *Barrel distortion*

By adjusting the distortion, the image is corrected to fit in the immersive view:



Fig. 141- Before and after the correction of the camera distortion

8.1.6 Adjust the IMU settings

An Inertial Measurement Unit, abbreviated as IMU, measures speed, orientation, gravitational forces and the yaw, pitch and roll. This data is used to increase the accuracy of recordings and the processing of the recorded data. With the data from the IMU, the software can keep the images level and correct deviations caused by a travelling vehicle or sloping roads. Any deviations can be corrected with the dials in the *IMU* tab:

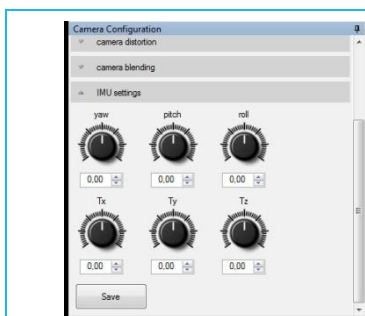


Fig. 142- IMU settings

- Yaw* *Corrects the yaw*
- Pitch* *Corrects the pitch*
- Roll* *Corrects the roll*
- Tx* *Corrects the X-axis position of the vehicle on the map (left-right)*
- Ty* *Corrects the Y-axis position of the vehicle on the map (height)*
- Tz* *Corrects the Z-axis position of the vehicle (forward-backward)*

8.1.7 Saving the IMU settings

To save the camera settings from the Immersive View Builder, click the *Save* button in the *IMU settings* tab:

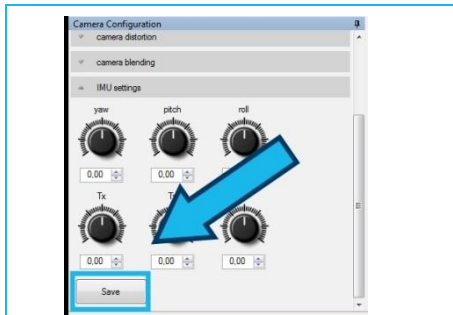


Fig. 143- Save IMU settings

8.2 Load a default camera setup

To load a default camera setup, click *File* and select *Load View*:

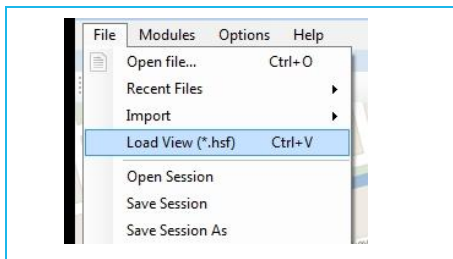


Fig. 144- Load a camera setup

The Movie Player will open a dialogue box in which you can specify the directory for the camera setup file. Select the camera setup you need and click *Open*:

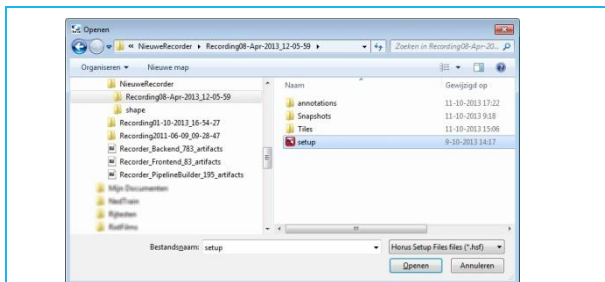


Fig. 145- Select the camera setup file (.hsf)

The new setup file will immediately render the camera streams in the main screen.

9 Annotation module

The Annotation module and the Layer Edit module are connected. The graphical annotations that are made in the Layer Edit module (height lines, surface areas, measurements) can be provided with written information. The Annotation Module allows you to add information to the geometrical annotations.

The Annotation module is activated with the *Annotation* button:

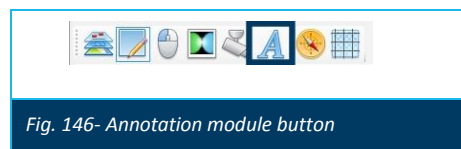


Fig. 146- Annotation module button

The Annotation screen is shown at the bottom of the screen:

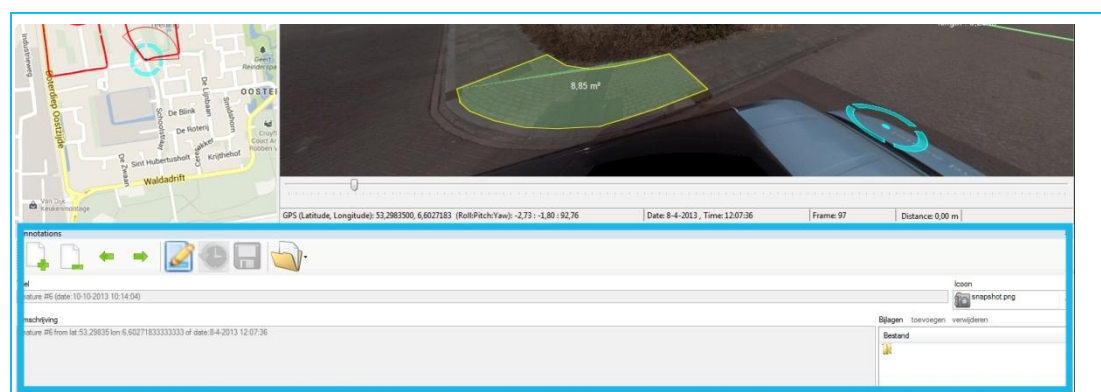


Fig. 147- Annotation module

The Annotation Module is controlled with the buttons in the Annotation screen:



Fig. 148- Annotation module control buttons

From left to right:

Add annotation

Delete annotation

Previous annotation

Next annotation

Edit annotation

Cancel editing

Save edit

Export

9.1 Browse annotations

The Annotation Module shows the annotation in the order they were made. The arrow buttons allow you to browse the annotations:

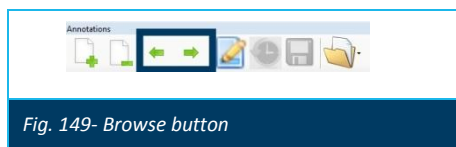


Fig. 149- Browse button

Each annotation has a unique title and an automatically generated description. The title consists of a unique number and the creation time and date of the annotation. The description consists of the recording date and time, plus the coordinates of the recording location:

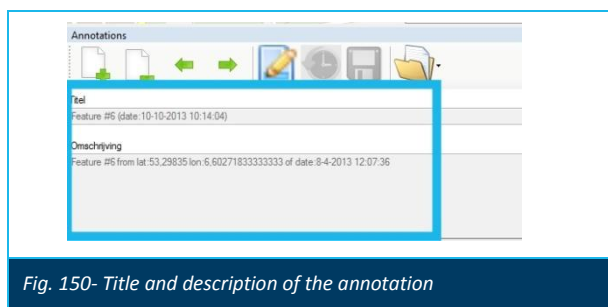


Fig. 150- Title and description of the annotation

The recording location of the annotation and the images from that location are shown on the map and in the main screen. To get a good look on the annotation, it may be necessary to use the *Previous frame* or *Next frame* buttons in the Movie Player controls (see 0)

9.2 Edit annotations

To edit an annotation, click the *Edit* button:

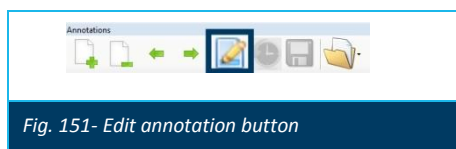


Fig. 151- Edit annotation button

The *Title* and *Description* fields of the annotation become editable (the text in the fields are black when editable):

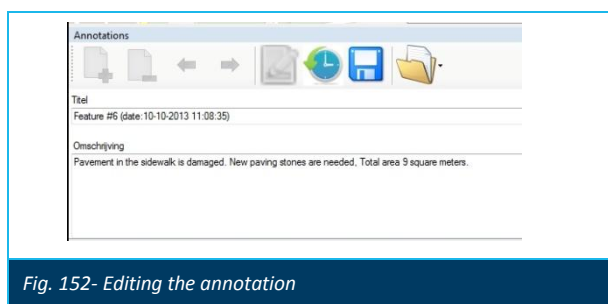


Fig. 152- Editing the annotation

9.2.1 Adding a attachment to an annotation

You can add an attachment to an annotation with the *Add* link in the *Attachment* field. **You can only add attachments in the edit mode!** To add an attachment, click the *Add* link:

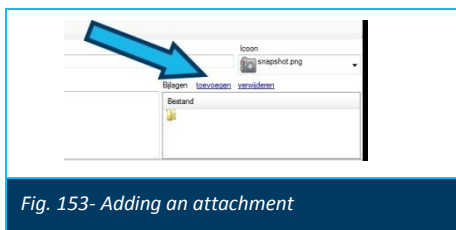


Fig. 153- Adding an attachment

The Annotation Module will open a window in which you can select the attachment. The attachment will be added after clicking *Open*:

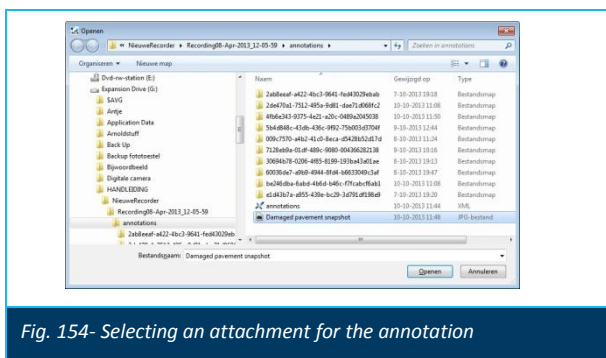


Fig. 154- Selecting an attachment for the annotation

9.2.2 Cancel editing annotations

The editing of annotations can be canceled with the *Cancel edit* button:

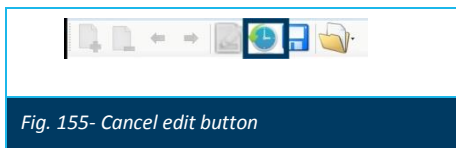


Fig. 155- Cancel edit button

9.3 Save annotations

To save the edited annotation and the added attachments, click the *Save* button:

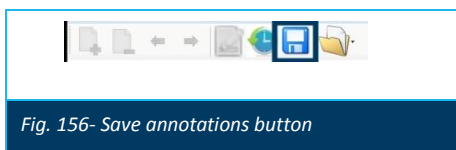


Fig. 156- Save annotations button

9.4 Export annotations

Annotations can be exported using the *Export* button. The annotations can be exported in two different methods: as an Excel file, or sorted by categories. Click the *Export* button to export the annotations:

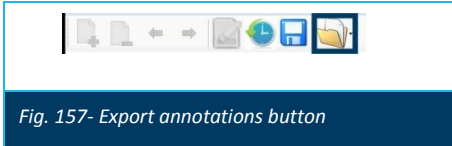


Fig. 157- Export annotations button

By clicking the *Export* button, two options will appear:

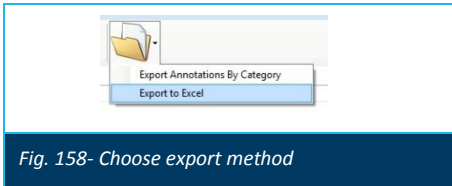


Fig. 158- Choose export method

9.4.1 Export annotations by category

To export the annotations by category, select the option *Export Annotation By Category*. The Annotation Module will now ask for a directory to save the annotations. Select the directory and click *OK*.

9.4.2 Export annotations in Excel

To save the annotations to an Excel worksheet, click *Export to Excel*.

10 Index

| | |
|--------------------------------------|--------|
| Annotation Form | |
| add hyperlink field | 34 |
| functions | 36 |
| Annotations | |
| add attachment | 59 |
| add hyperlink | 34, 37 |
| browse annotations | 58 |
| cancel editing | 59 |
| Create a new layer | 35 |
| create annotation form | 32 |
| description | 58 |
| edit | 58 |
| export | 60 |
| export by category | 60 |
| name | 58 |
| save annotations | 59 |
| Area measurement | 45 |
| Attachment | |
| to an annotation | 59 |
| Attribute data | |
| geometry | 38 |
| show data | 38 |
| Attribute data form | |
| Preset numbers | 38 |
| AttributeDescription | 33 |
| Audio | |
| mute | 17 |
| AutoComplete | 34 |
| AutoFill | 34 |
| Brightness | 20 |
| Camera | |
| GPS adjustment | 21 |
| height adjustment | 21 |
| jaw | 21 |
| pitch | 21 |
| roll | 21 |
| Camera angles | |
| adjusting | 21 |
| Camera default | 56 |
| Camera distortion | |
| adjustment | 55 |
| Camera setup | |
| load default setup | 56 |
| Cancel editing annotations | 59 |
| Category | 33 |
| Clone geometries | 46 |
| Cursor | 14, 21 |
| color | 14 |
| Cursor reference | 42 |
| DefaultValue | 33 |
| Delete geometry | 46 |
| Displayname | 33 |
| Entity.xml file | |
| create new file | 32 |
| Enum values | 34 |
| Estimating measurements | |
| project circle on ground level | 42 |
| project cone on ground level | 43 |
| project mast on ground level | 42 |
| Export annotations | 60 |
| Export as .AVI | 23 |
| Export source | |
| database range | 40 |
| Export to Excel | 40 |
| Exporting images and videos | 23 |
| External camera | |
| thumbnail viewer update | 20 |
| External camera view | 19 |
| Flat view | 17 |
| Floating objects | 30 |
| Frame number | 15 |
| Geometries | 42 |
| Geometries | |
| show form | 39 |
| Geometries | |
| cloning | 46 |
| GPS position | |
| correct recorded position | 55 |
| Height | 45 |
| Height profiler | 47 |
| Hidden | 33 |
| Horus Project | |
| create new project | 25 |
| Horus Project Builder | 25 |
| Hyperlink | 37 |
| Icons in layers | 30 |
| Image rendering | |
| mode | 17 |
| Image rendering mode | |
| flat view | 18 |
| multiview | 18 |
| panoramic view | 18 |
| spherical view | 17 |
| Immersive view | |
| adjust image size | 53 |
| building a new view | 52 |
| camera distortion | 55 |
| image position | 53 |
| overlap blending | 54 |
| Immersive View Builder | 52 |
| Import as spatialite layer | 37 |
| IMU | |
| save settings | 56 |
| IMU settings | |
| adjustment | 55 |
| Installation | 8 |

| | | | |
|---------------------------------------|----|--------------------------------------|----|
| Installation directory | 8 | add height line | 45 |
| Introductive Security Suite | 7 | add multiline | 44 |
| IR | | add polygon | 45 |
| adjusting colors | 51 | Map | |
| blue-red-white rendering | 51 | download for offline use | 12 |
| deactivation | 51 | selecting a recording location | 11 |
| rainbow rendering | 51 | Map background | |
| rendering method | 50 | selecting a map | 11 |
| thermal rendering | 50 | zooming and moving | 11 |
| visualization | 50 | Map screen | 10 |
| IR coloring module | 50 | Merge layers | 37 |
| Last selected objects data form | 38 | Multi click measurement | 47 |
| Layer | | Multiview | 17 |
| convert to spatialite | 37 | Open movie file | 9 |
| import method | 37 | Panorama | 16 |
| merge with other layer | 37 | Panoramic view | 17 |
| Layer Edit module | 41 | Playback speed | 20 |
| Layer import | | Player controls | |
| import as new layer | 38 | Buttons | 14 |
| import as spatialite layer | 37 | Player preferences | 17 |
| merge with existing layer | 37 | Points | |
| Layer manager | | Adding a point to a layer | 43 |
| start | 27 | change icon | 43 |
| Layer Manager | 27 | move position | 43 |
| Layer objects | | ReadOnly | 34 |
| project on ground level | 30 | Reference object | 42 |
| Layers | | Screen elements | |
| activating and deactivating | 29 | description | 10 |
| adjusting colors | 30 | Selecting objects | 30 |
| creating a new form | 32 | Snapshot | 16 |
| creating a new layer | 32 | properties | 16 |
| deleting a layer | 39 | SnapshotFileNameFormat | 34 |
| export | 39 | software license agreement | 8 |
| format for export file | 39 | Spatialite | 37 |
| icon for points | 30 | spatialite layer | 37 |
| object colors | 30 | Spherical view | 17 |
| opacity | 30 | Timeline | 14 |
| override height | 30 | Timeshift | 21 |
| projection for export | 39 | Type (xml command) | 33 |
| select labeling | 31 | Work session | |
| selectable objects | 30 | open | 24 |
| visibility | 29 | open session | 24 |
| visible range | 29 | save | 24 |
| Lenght measurement | 44 | Working with the Movie Player | 9 |
| multiline | 44 | XML Commands | 33 |
| Line | | Zoom | 15 |
| add a line | 44 | | |